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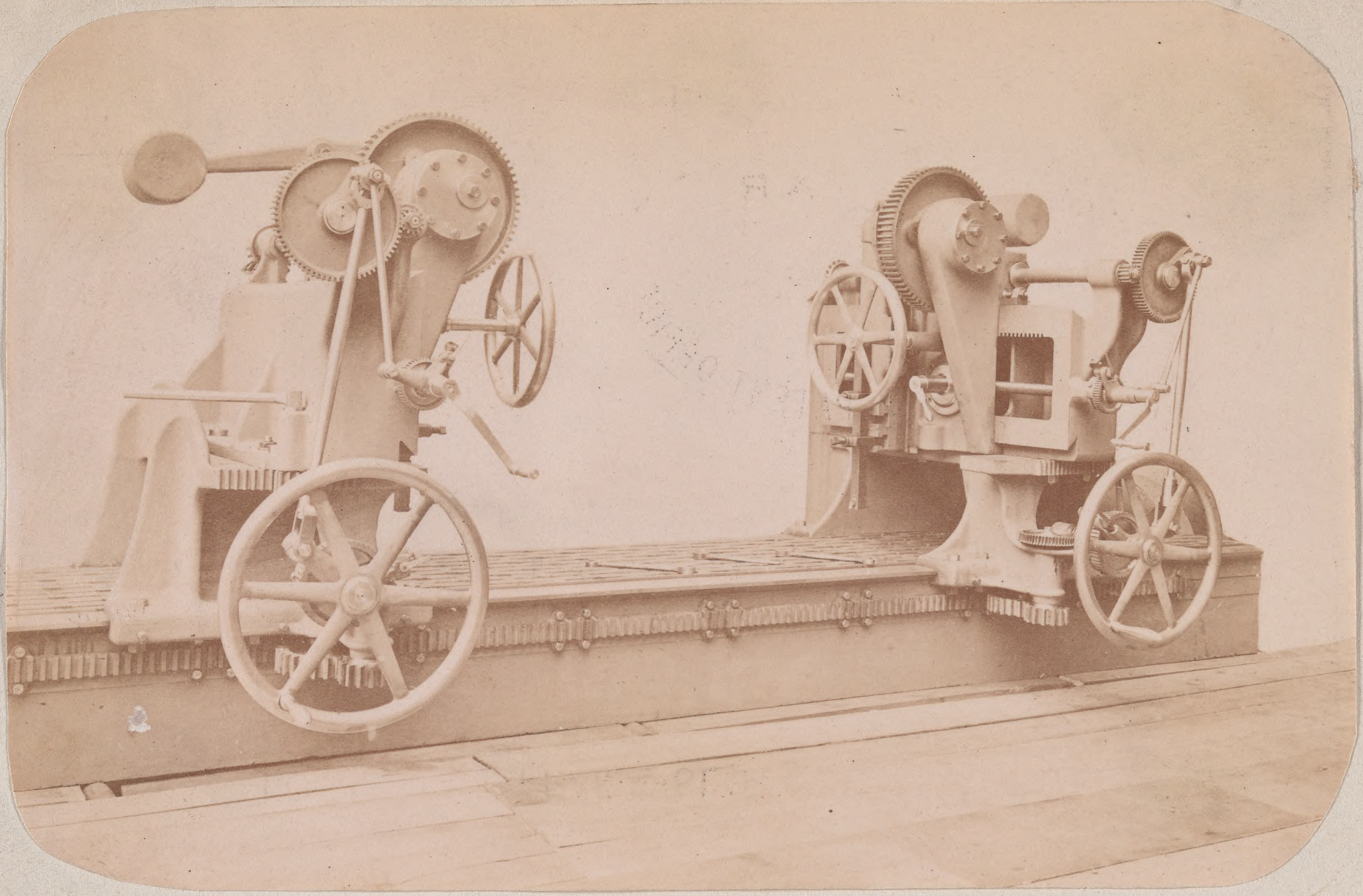

MSS
1698 B
SCDIRB

LOCOMOTIVE FRAME SLOTTING MACHINE.

Arranged with two heads facing each other and sliding on long bed; each head driven and operated separately, with capacity for dressing two frames one resting upon the other; driving pulleys thirty inches diameter six inches face; self-feeding in all directions; heads can be set at an angle for slotting jaws; stroke twelve inches, with quick return and counterbalance; two countershafts.

With 24 feet bed, 16½ feet between tools.

Weight, lbs., bed, $

Price per extra foot of table, $

Terms: Cash on shipment.

Boxing and Porterage extra, at cost.

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WM. B. BEMENT & SON,

INDUSTRIAL WORKS, PHILADELPHIA.

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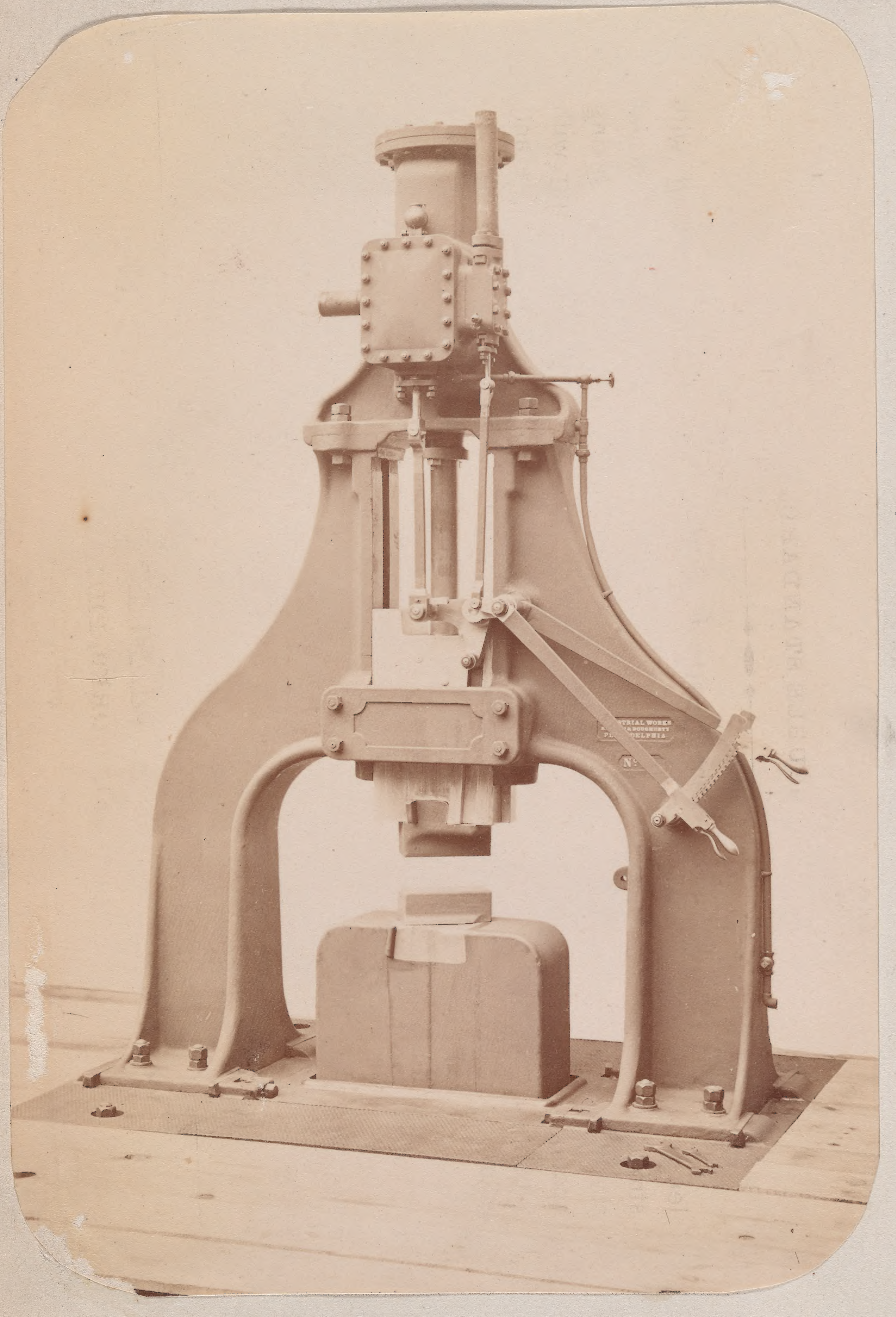

DSI

1500 lb. STEAM HAMMER.

(DOUBLE STANDARD.)

Weight of drop and attached parts from 1550 to 1700 lbs., varying with length of stroke and kind of dies; area of die surface 10 in x 17 in; usual stroke for iron work 30 in, shorter for steel drawing; double acting, taking steam both above and below piston; perfectly balanced slide valve, working with accuracy, but very easily and almost without wear; valve-gear is very simple and substantial, producing every variation in length, position, rapidity and force of blow, whether operated automatically or by hand; piston rod and rings of cast steel, piston and drop of wrought iron; piston can be raised above top of cylinder for insertion of packing rings without separating rod from drop; every hammer tried before leaving the works; complete foundation drawings furnished free of charge.

Without anvil, weight, lbs., price, $
With " " " " $

WM. B. BEMENT & SON,
INDUSTRIAL WORKS, PHILADELPHIA.

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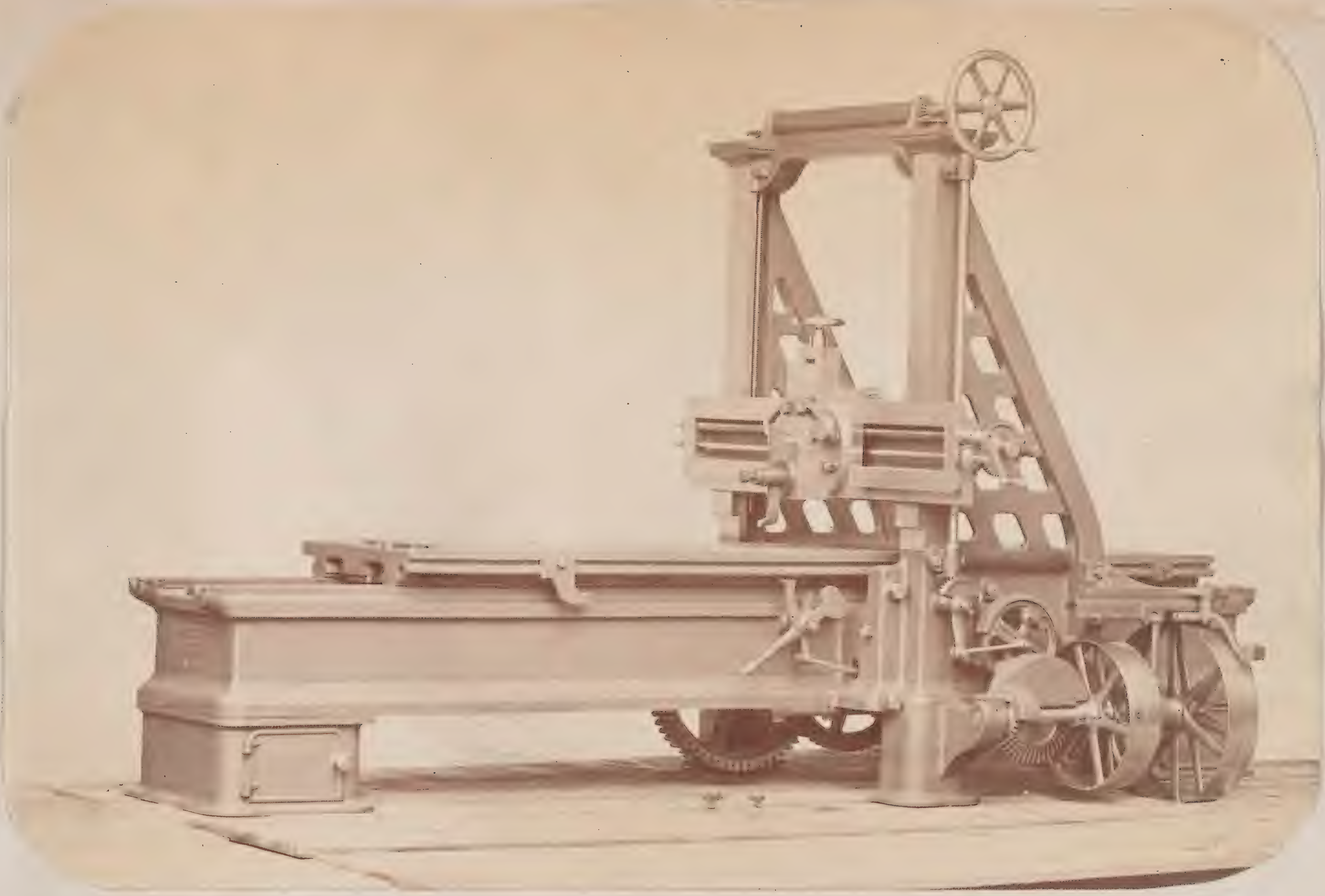

THIRTY-SIX INCH PLANING MACHINE.

Planes 36 in. wide and 36 in. high; self-acting feed, operated directly from driving works by positive gearing, in either direction, at either end of the cut, and capable of any variation up to $\frac{5}{8}$ in horizontally and $\frac{1}{4}$ in. vertically; head swivels to any angle, and has a vertical movement of $9\frac{3}{4}$ in.; table has quick return motion, and is driven by rack and gearing, which, when properly constructed, are known to produce as good results and utilize the power applied as thoroughly as any movement yet brought into use; bed is effectually strengthened at and near the centre, where it is subject to the greatest strain; two belts, separately shifted, are used for forward and backward movements of table; driving shaft is parallel with bed of machine; countershaft and wrenches included.

With table to plane 8 ft. long, weight lbs., price $
Price per extra foot of table, . . . , ... $
Extra head on cross-slide, with separate screw, ... $
Terms: Cash within 30 days.
Boxing and porterage extra, at cost.

WM. B. BEMENT & SON,
INDUSTRIAL WORKS, PHILADELPHIA.

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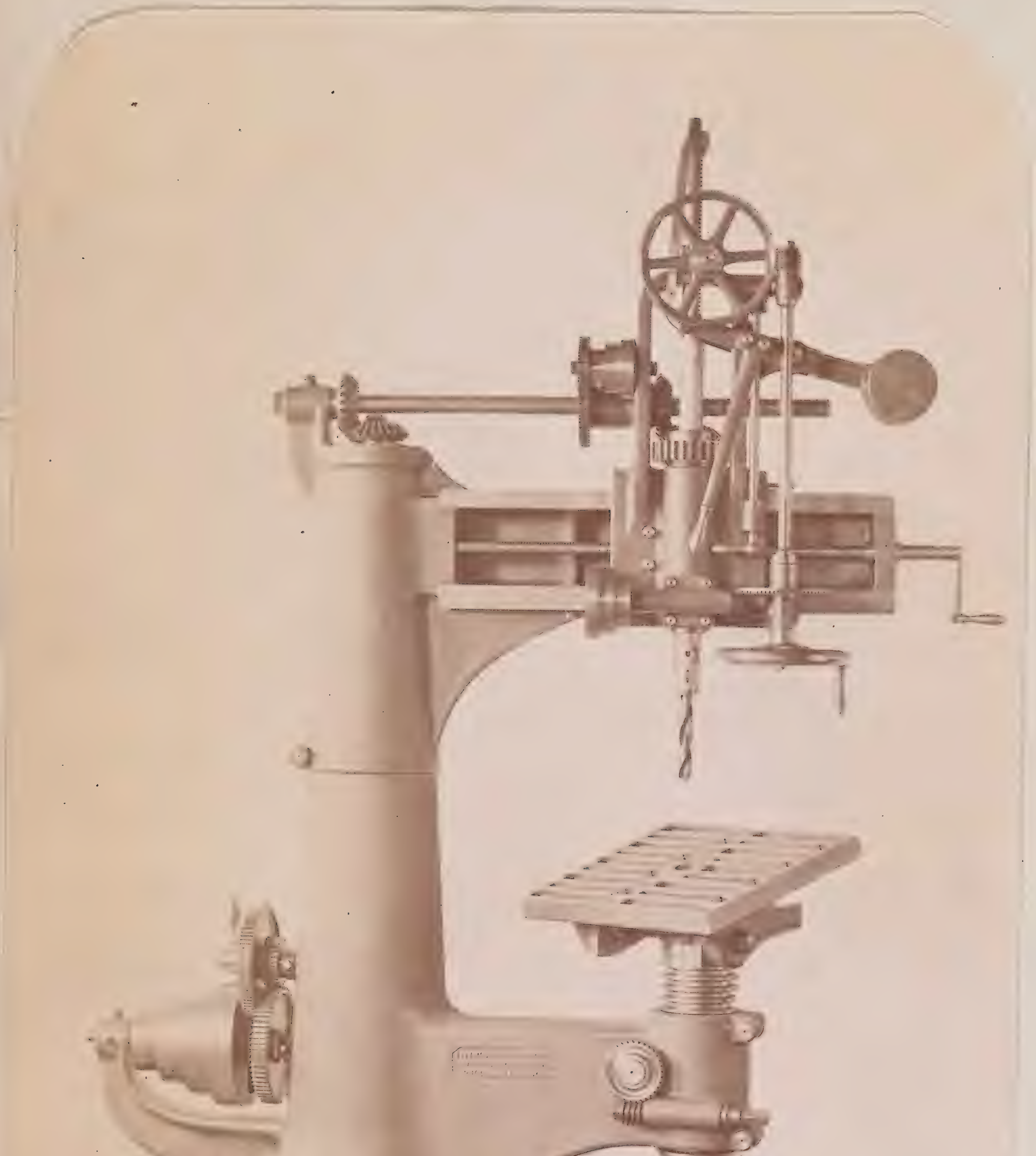

FOUR FEET RADIAL DRILLING MACHINE.

Distance from centre of column to end of arm 4 feet; driven by $2\frac{1}{2}$ in. belt on cone of four changes, and double geared, giving spindle eight motions; spindle is $2\frac{1}{4}$ in. diameter, and has 12 inches traverse, counterbalance and quick hand movement by lever; hand and self-feeding, with three changes; table revolves, can be adjusted and secured at any angle from horizontal to perpendicular, and has vertical adjustment of 14 in; slotted base-plate with planed surface 32 in. square; greatest distance between spindle and table 26 in., and between spindle and base-plate 52 in.; countershaft and wrenches included.

Weight, lbs. Price, $
Terms: Cash within 30 days.
Boxing and porterage extra at cost.

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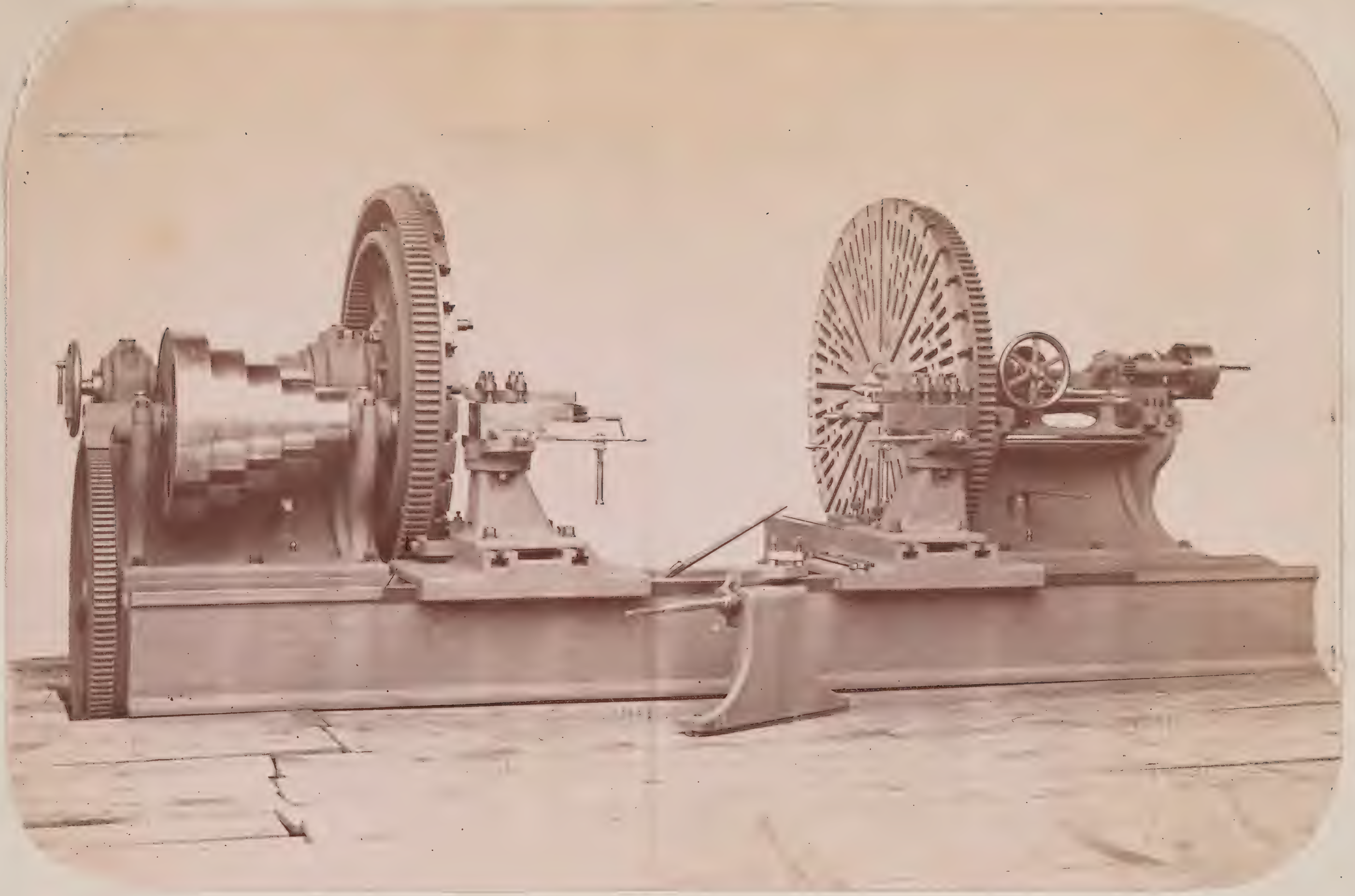
INDUSTRIAL WORKS, PHILADELPHIA.



DOUBLE HEADED WHEEL LATHE.

Swings seventy-nine inches diameter; bed nineteen feet long; cone has five changes for six inch belt; double geared, giving ten speeds to one face plate and five to the other; each main spindle is furnished with an internal sliding spindle for longitudinal adjustment of centre; self-feeding in all directions; face plates can be driven together or separately, as desired; bed is elevated in front to strengthen it, and also to shorten tool rests; single wheel quartering and crank pin boring attachment on front part of sliding head, operating through face plate.

Weight lbs., price $

Terms: Cash on shipment.

Boxing and Porterage extra, at cost.

Price of Lathe without quartering apparatus, $

WM. B. BEMENT & SON,
INDUSTRIAL WORKS, PHILADELPHIA.

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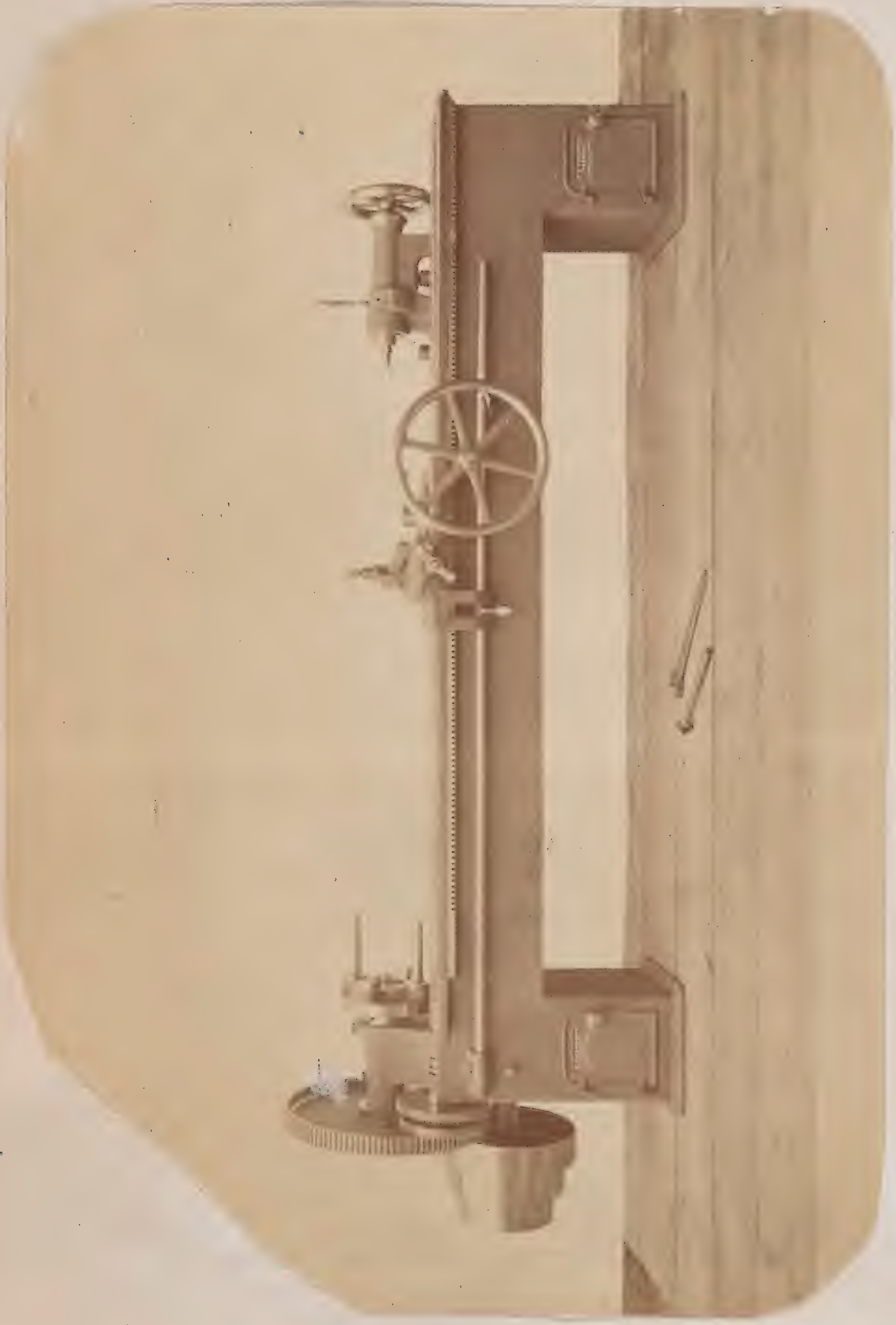


AXLE LATHE.

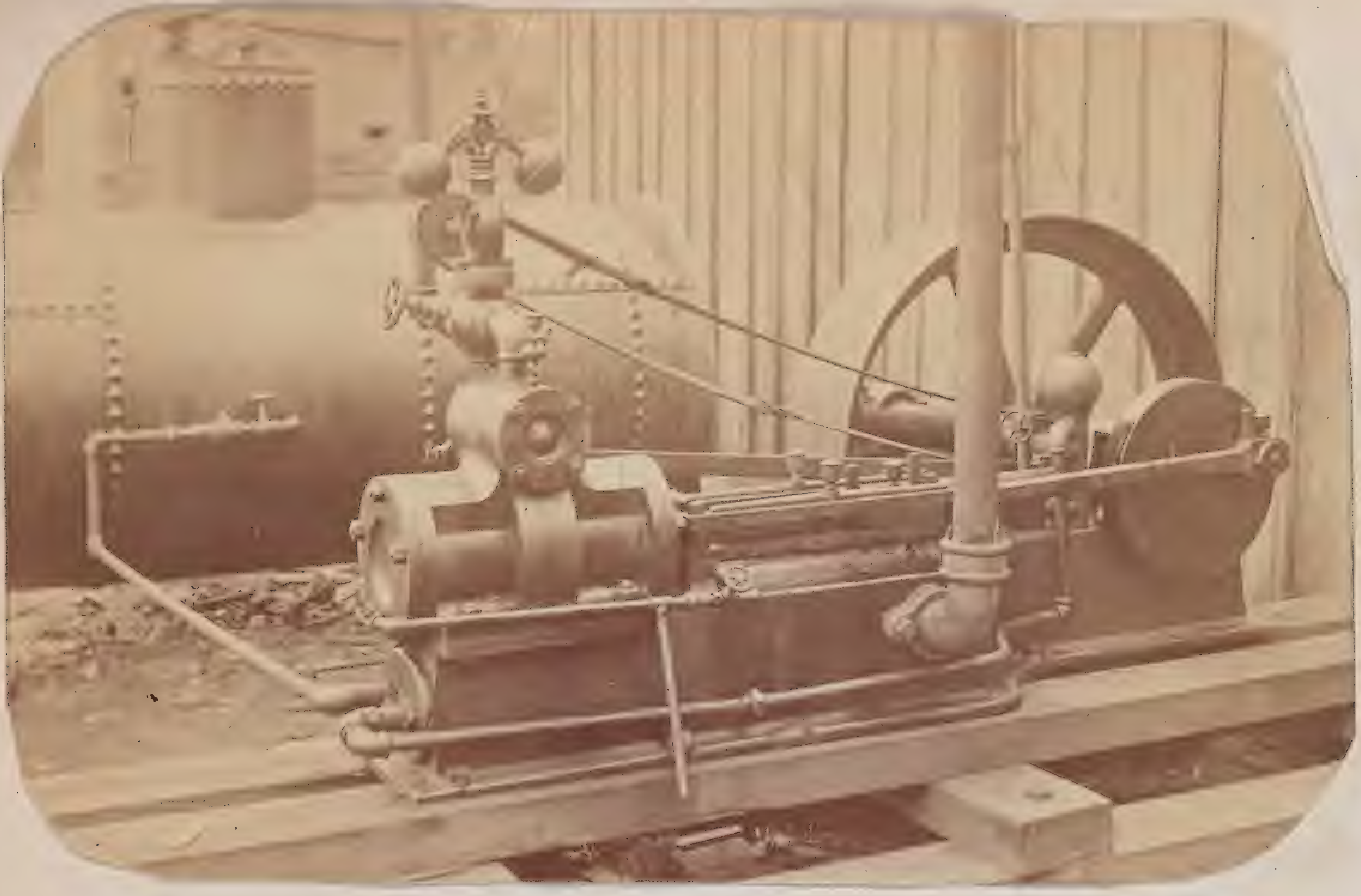
Length of bed eleven feet; driven by cone with three changes for a four inch belt, and strongly geared; feed automatic, with two changes, operated by handle attached to carriage; bed raised in front to secure additional strength, to shorten tool rest, and to allow carriage to pass sliding head; carrier double and self adjusting; dead spindle clamped by improved binder consisting of a conical sleeve which adjusts to the wear of the spindle and keeps it central; countershaft with two sets of tight and loose pulleys to change speeds for roughing and finishing; water tank attached to carriage; tool closet standards.

Weight, lbs., price $

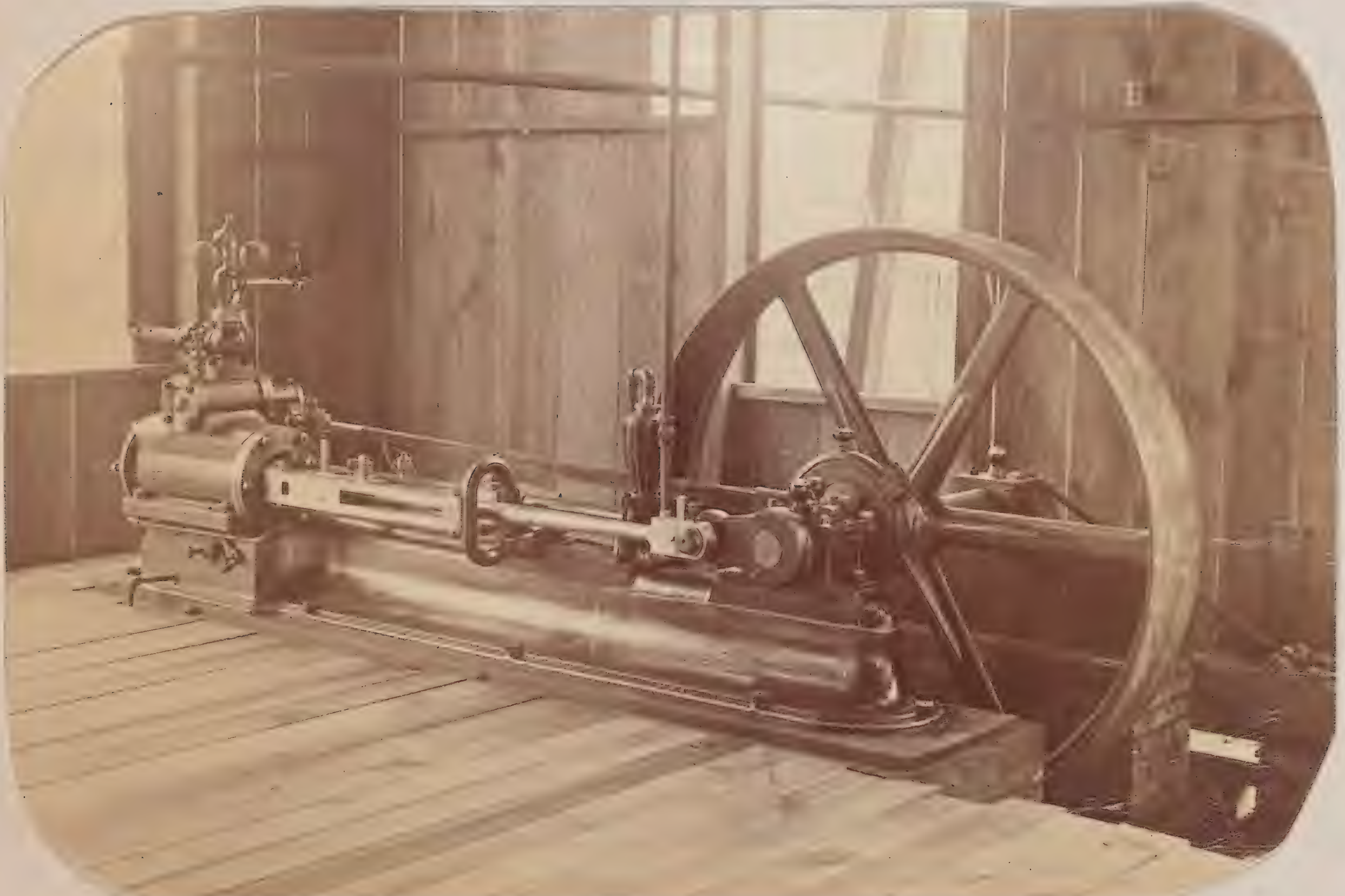
Terms: Cash on shipment.

Boxing and Porterage extra, at cost.

WM. B. BEMENT & SON,
INDUSTRIAL WORKS, PHILADELPHIA.



Wiggin & Simpson Houston Texas



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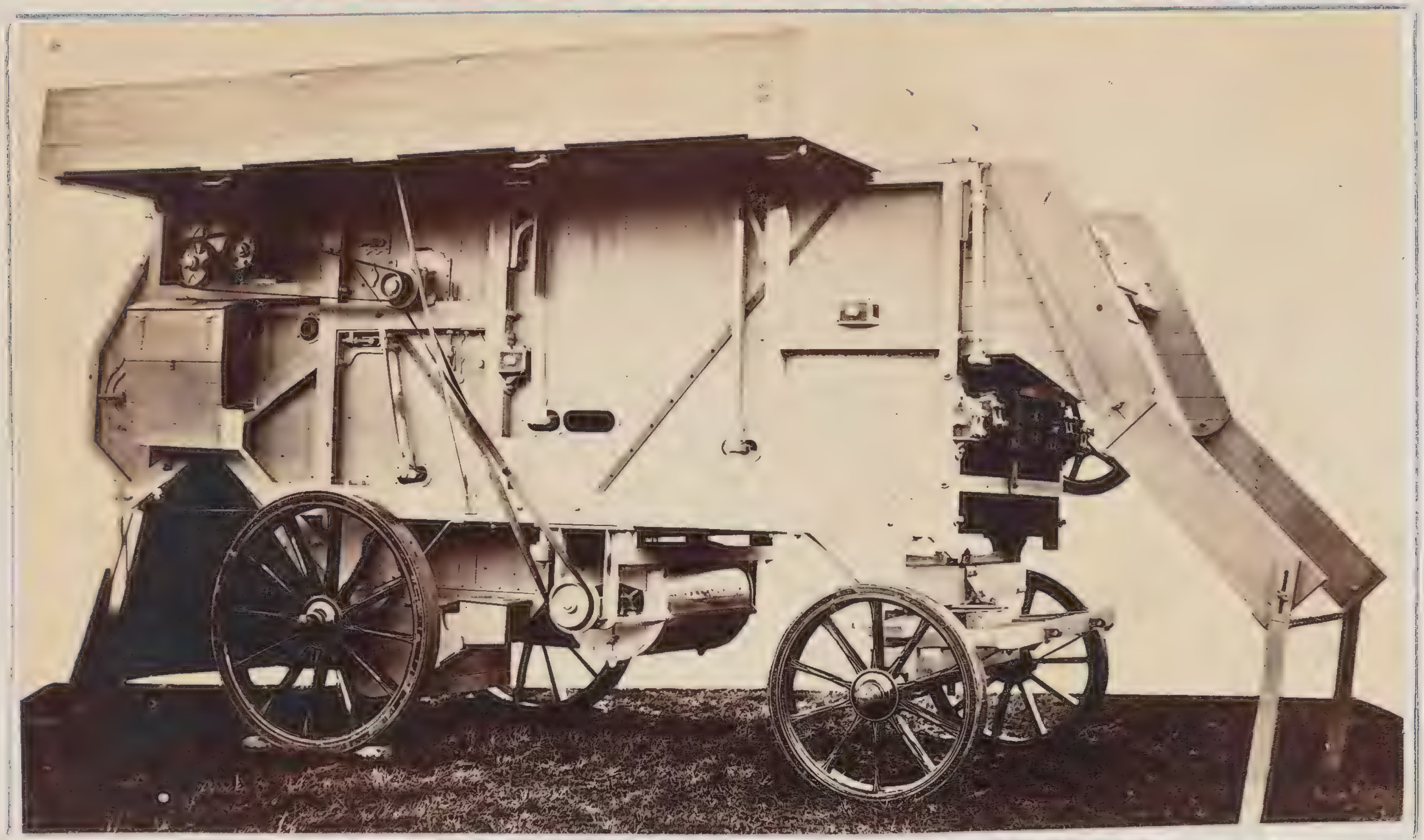
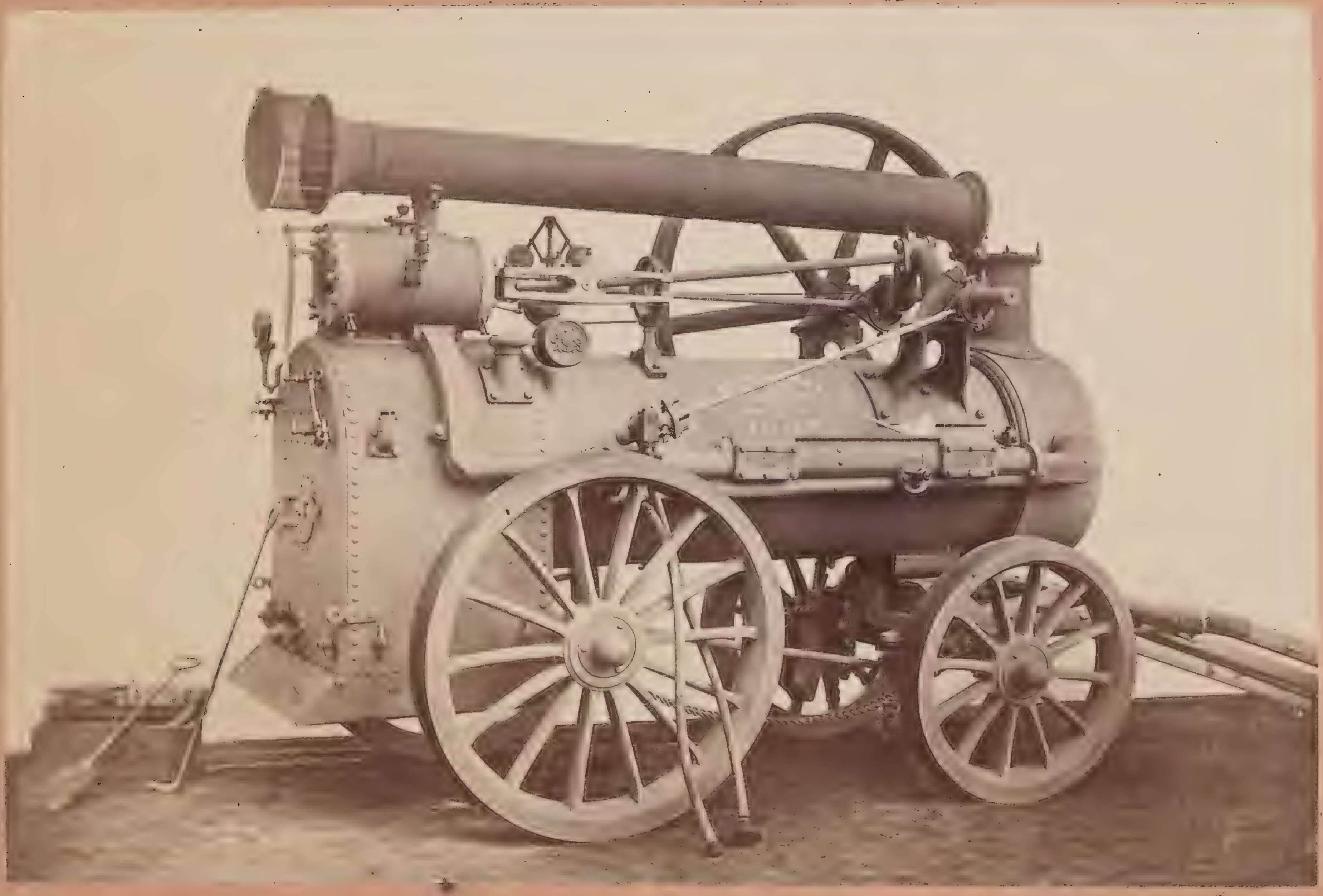
NALDER AND NALDERS'



STEAM THRASHING AND FINISHING·DRESSING MACHINES.



Brown & May

Devizes England

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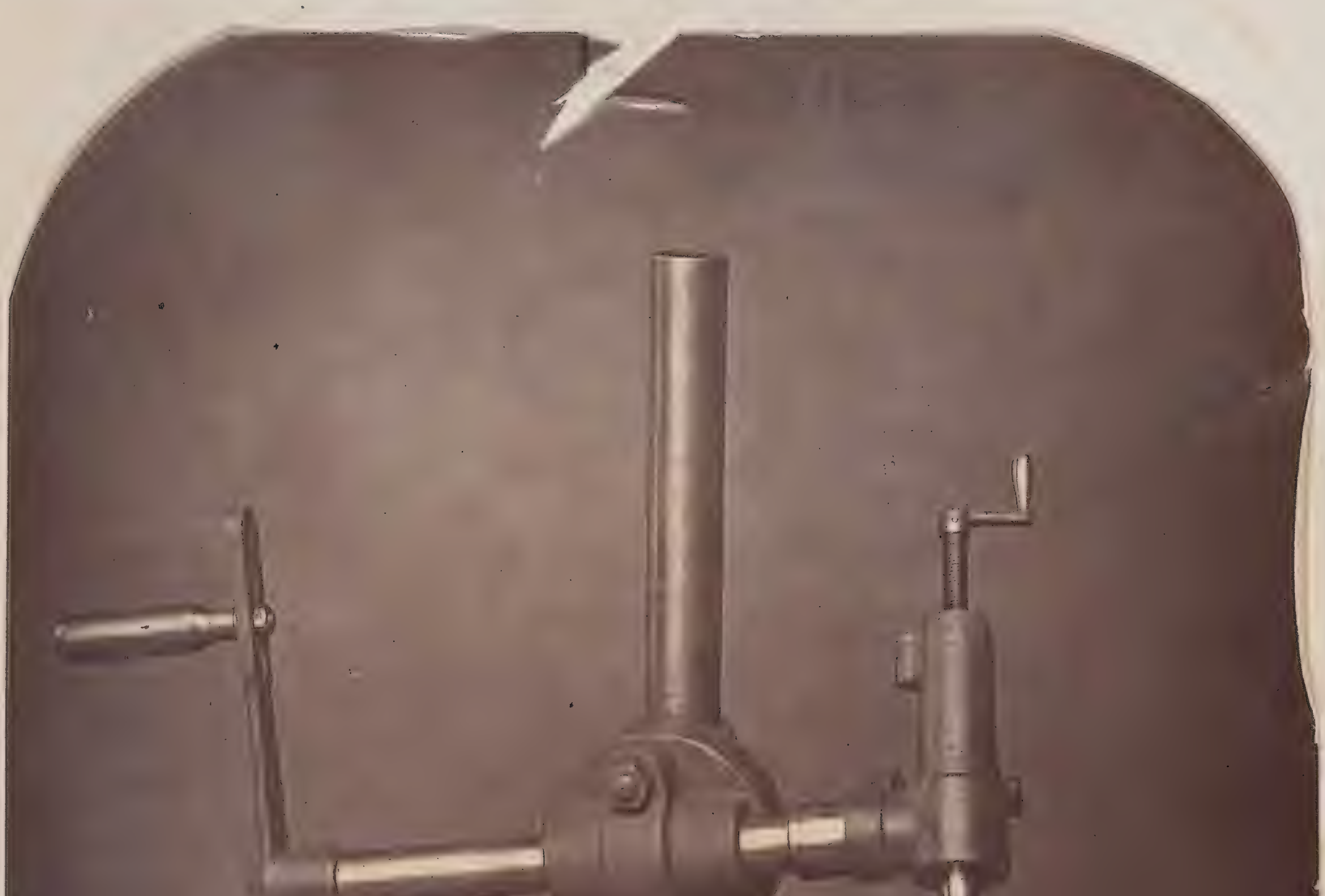

PORTABLE SELF-FEEDING DRILL.

Will drill up to 1⅛ inches in wrought iron; and will enlarge holes or half holes up to 3 inches diameter, by use of boring bars and cutters: the spindle has 3 inches feed, rapid hand movement by screw, (shown at top of drill,) bored at base to admit standard drills and sockets: post has 22 inches vertical adjustment: arm of drill moves in and out 5 inches: with one setting a surface of 25 inches outside, and 16 inches inside diameter, can be drilled: spindle can be set at any angle to, or parallel with base: hand crank has slotted arm to adjust the handle for drilling various sized holes: tool and organs steel and iron, case-hardened—working parts are inclosed, making them both oil and dirt tight: self-feeding arrangement very strong and rapid: cast iron post, cored taper from base to top, may be bolted to work with hinged clamp, or be adjusted to irregular or beveled surfaces: clamp swings and slides on post.

Pulleys and counter hanger for power drilling furnished when ordered, extra.

Weight, 85 lbs., price, $ 75 00 including swiveled head on tool post, as shown—$5.00 less for solid head.

Terms: Cash within 30 days.

Boxing and Porterage extra, at cost.

C. VAN HAAGEN & CO., Patentees,

Manufacturers of C. Van Haagen's Patent Machinists' Tools,

2341 & 2343 Callowhill Street, Philadelphia, Pa.

Arch, Race and Vine Street Cars pass the Factory.

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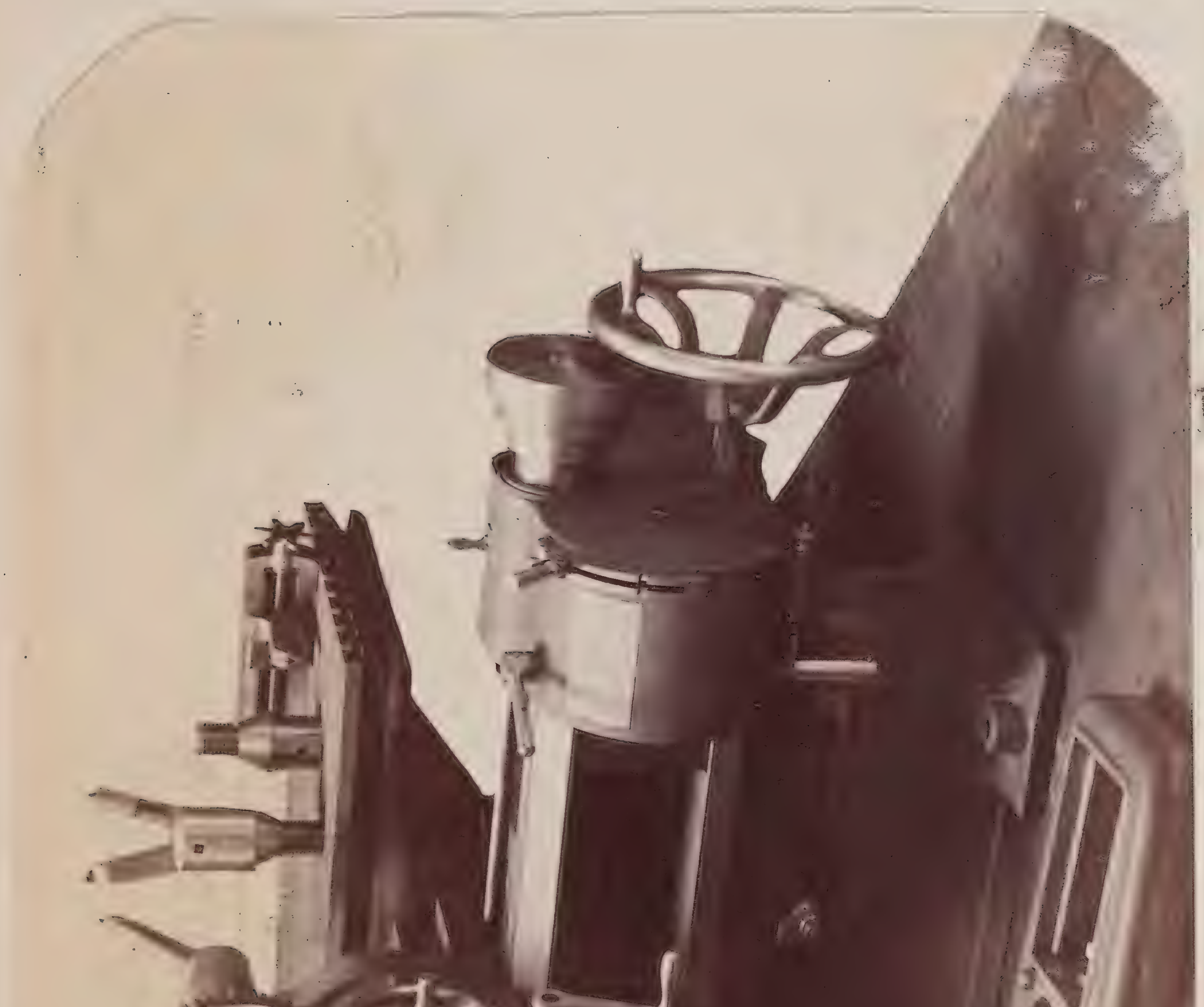

PATENT ROTARY SHAPER, etc,

For Planing, Horizontal Boring & Drilling, Head Lathe work, Gear, Slot, Key Seat Cutting, &c.

◆

Capacity.—To plane 3 feet 8 inches in length and 28 inches in width, (two armed expanding rotary cutter; planes 10 inches in width as it moves forward). For boring to a depth of 27 inches and from 18 to 24 inches in diameter; horizontal key seats and slots any width, and 3 feet 8 inches in length, vertical key seat and slots any width and 2 feet in length.

Spindle two and one-half inches diameter, enlarged to five inches at the front end, giving taper journal bearing, and taper bearing for tools, boring bars, and sockets; distance between spindle and table in lowest position twenty-four inches; between spindle and top of bed frame eighteen inches, and between spindle and top of slide rest ten inches; driven by cone with four changes for a three inch belt, and double geared, giving eight speeds to spindle: Self and hand-feeding, with eight changes; head-Stock has twenty-seven inches traverse rapid hand movement by crank, and moves longitudinally three feet nine inches, automatically or by hand, with eight changes of speed; table moves vertically two feet, automatically or by hand, with eight changes of speed counterbalanced, and swings and slides upon its bed.

Two armed expanding steel head for planing; Self-feeding tool for dressing off face of cylinder flanges, and all circular work; Steady rest for boring bars, socket, wrenches, and countershaft included.

Price, ...$3000, Weight, 8500 lbs.
" For extra strong head stock, triple geared, ...$
" For hollow spindle to admit a boring bar from back end, extra ..$

C. VAN HAAGEN & CO., Patentees,
Manufacturers of C. Van Haagen's Patent Machinists' Tools,
Arch, Race & Vine St. Cars pass the Factory. 2341 & 2343 Callowhill St., Philadelphia, Pa.

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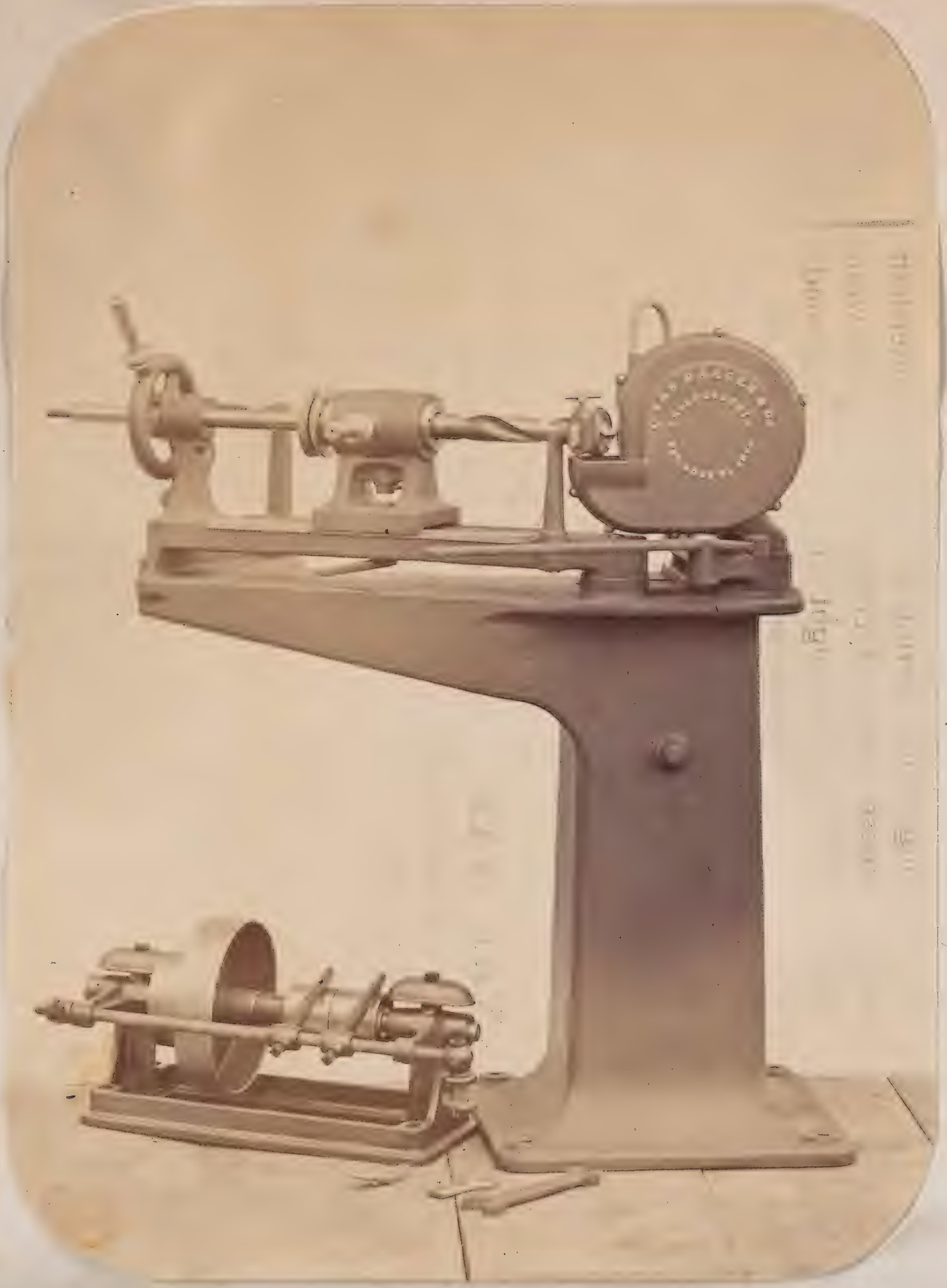
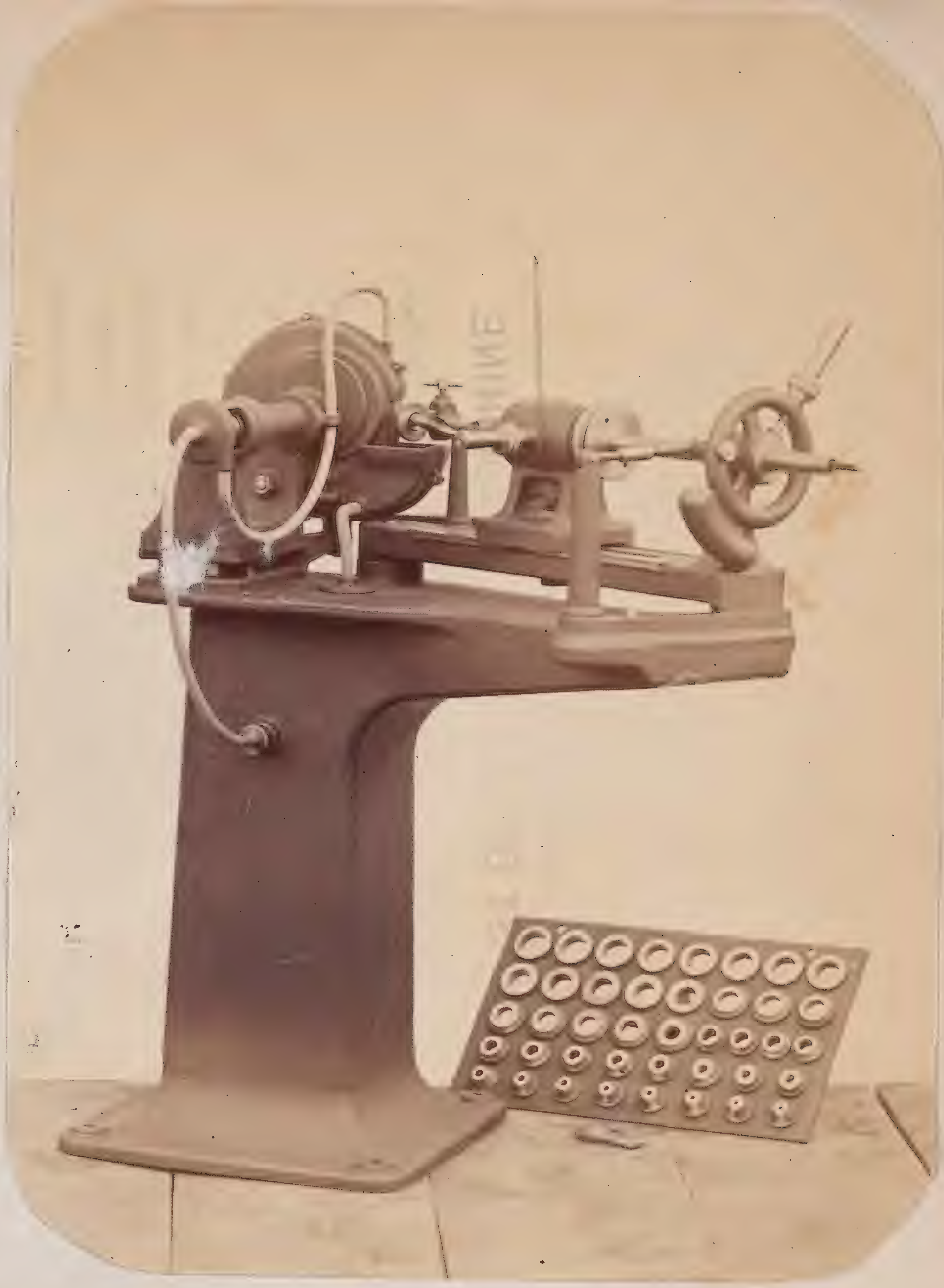




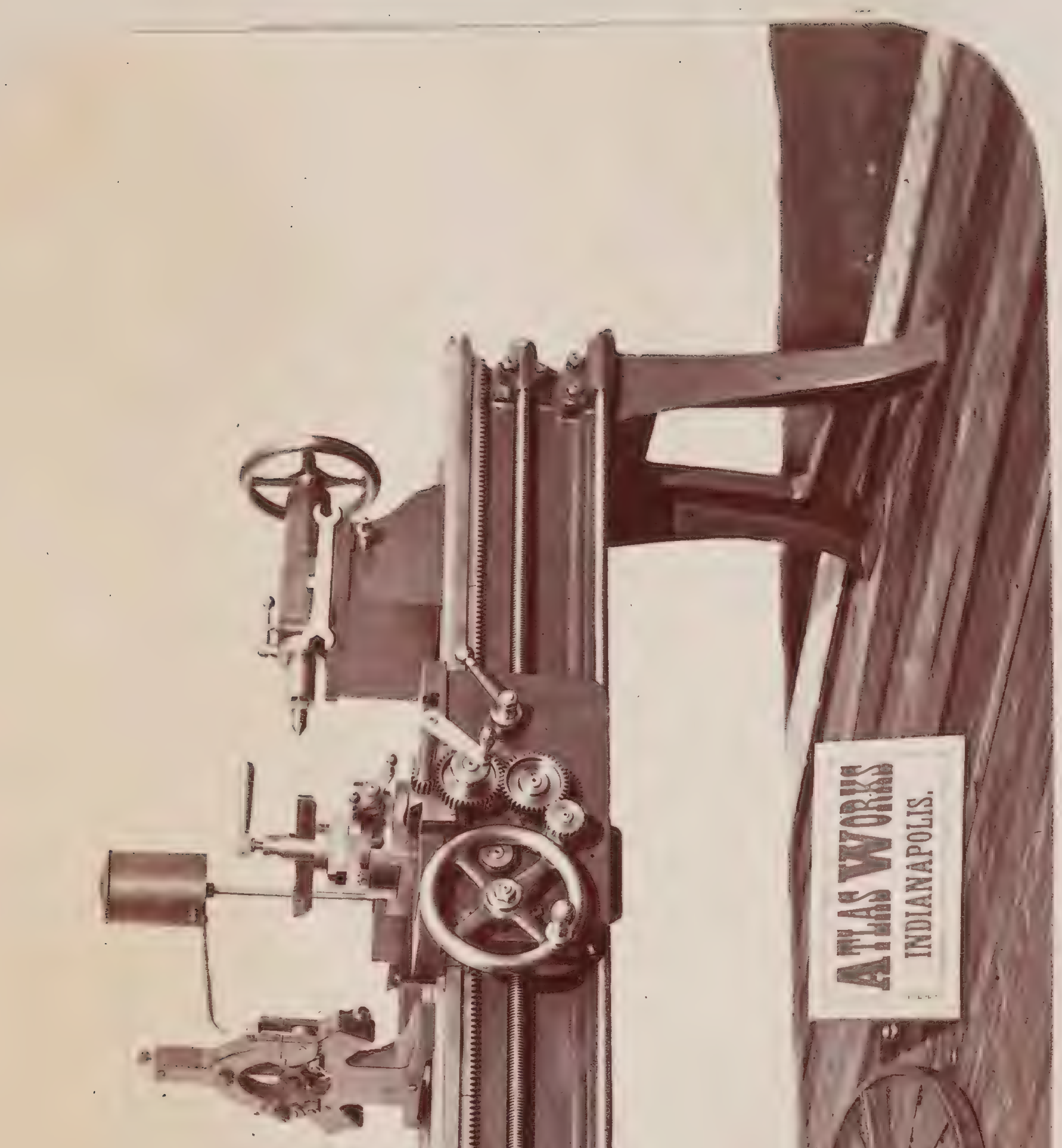
No. 1 TWIST DRILL GRINDING MACHINE.

Arranged to grind twist and flat drills from ¼ to 2½ inches, any lengths: adjustable and self-acting in every direction: grinds cutting edges mathematically true and backs off the clearance at the same operation, insuring perfect accuracy and uniformity in angle and length of cutting edges: head-stock carrying emery wheel has a traverse motion by lever shown at right hand, and is also adjustable to compensate for wearing away of wheel: shank of drill held in hollow spindle arranged with ball and socket, lip of drill supported near emery wheel in rings or eyes, which are adjustable in a post bearing, by set screw: a pump for forcing water to grinding disk during operation of grinding, to prevent danger of annealing the cutting edges of drill: grinding disk is inclosed to prevent water from escaping: rod through hollow spindle for removing drills: driving pulley on countershaft has a step to increase speed of emery wheel when worn down: organs steel and wrought iron, case-hardened: countershaft, wrench, 8½-inch emery wheel and set of 41 steel rings included.

Weight 490 lbs., price, $175.00 Nt /130.00
Set sockets, furnished when ordered, extra.
Terms: Cash within 30 days.
Boxing and Porterage at cost.

C. VAN HAAGEN & CO., Patentees,
Manufacturers of C. Van Haagen's Patent Machinists' Tools,
2341 & 2343 Callowhill St., Philadelphia, Pa.

JOHN R. NAGLE & CO., PRS., 524 MARKET ST.


ATLAS WORKS
INDIANAPOLIS.

Twenty Inch Engine Lathe.

Double geared; swings twenty-one inches over the slides and thirteen and one-half inches over the carriage; steel spindle; gun metal boxes, with hardened cast steel step to receive thrust of spindle; compound rest; self-acting cross feed; rod and screw on the front side of the lathe, arranged to be instantly changed from one to the other while both are in gear; carriage has quick hand movement; wrought-iron rack and pinion; center rest; large and small face plates; water pot on adjustable standard; set of screw gears; countershaft; wrenches, etc.

Length between centers, ... 4 ft.
Whole length of bed, ... 7 ft. 6 in.
Price, $750—
Price per extra foot of bed, $15—
Boxing and hauling extra, at cost.

ATLAS WORKS, - - - INDIANAPOLIS, IND.

25 Buckeye Engine Co

Collett & Bro., Alton Ills

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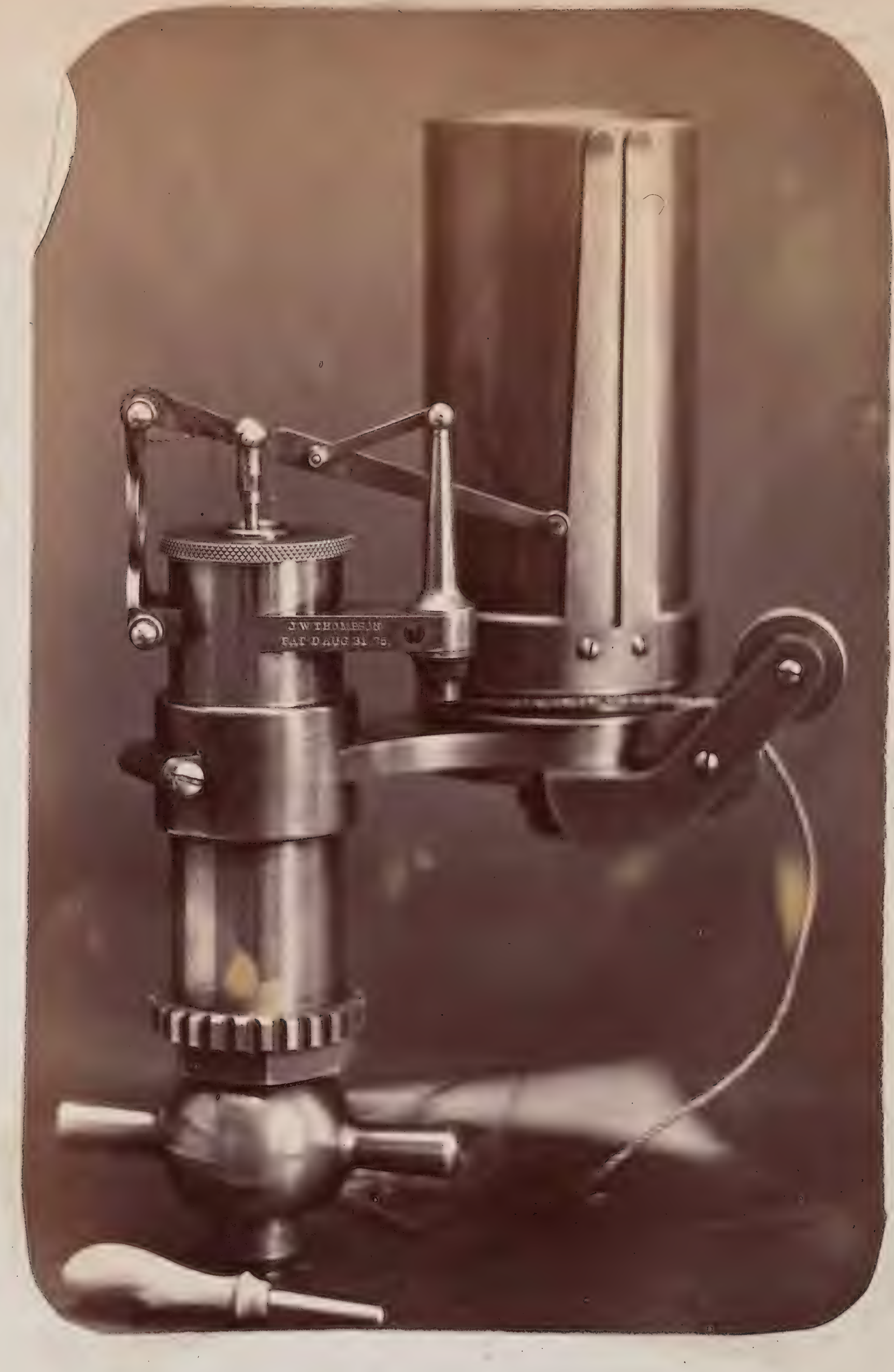

Buckeye Eng Co Salem Ohio

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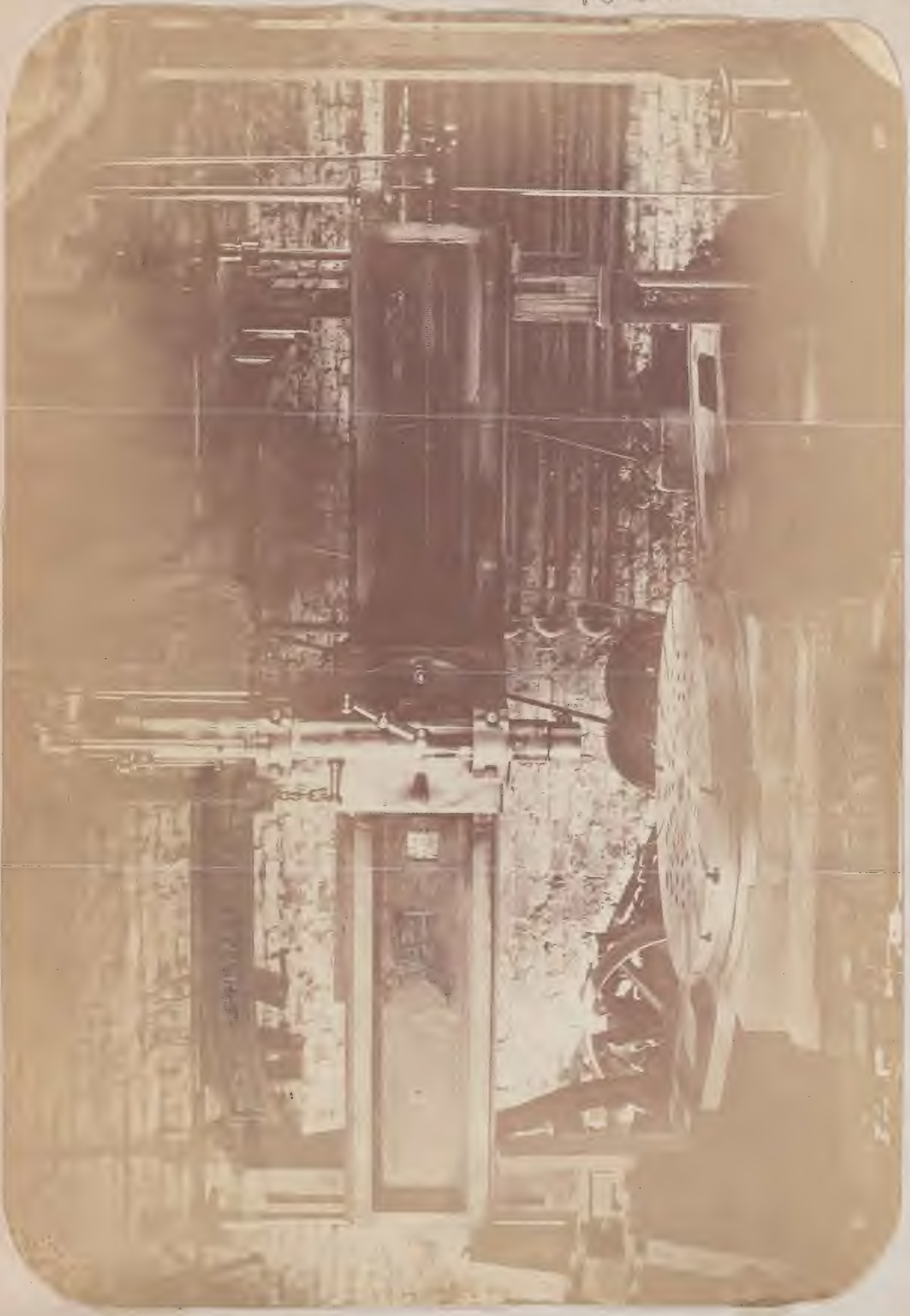
Bradley Burnham & Co.
Delaware Ohio -



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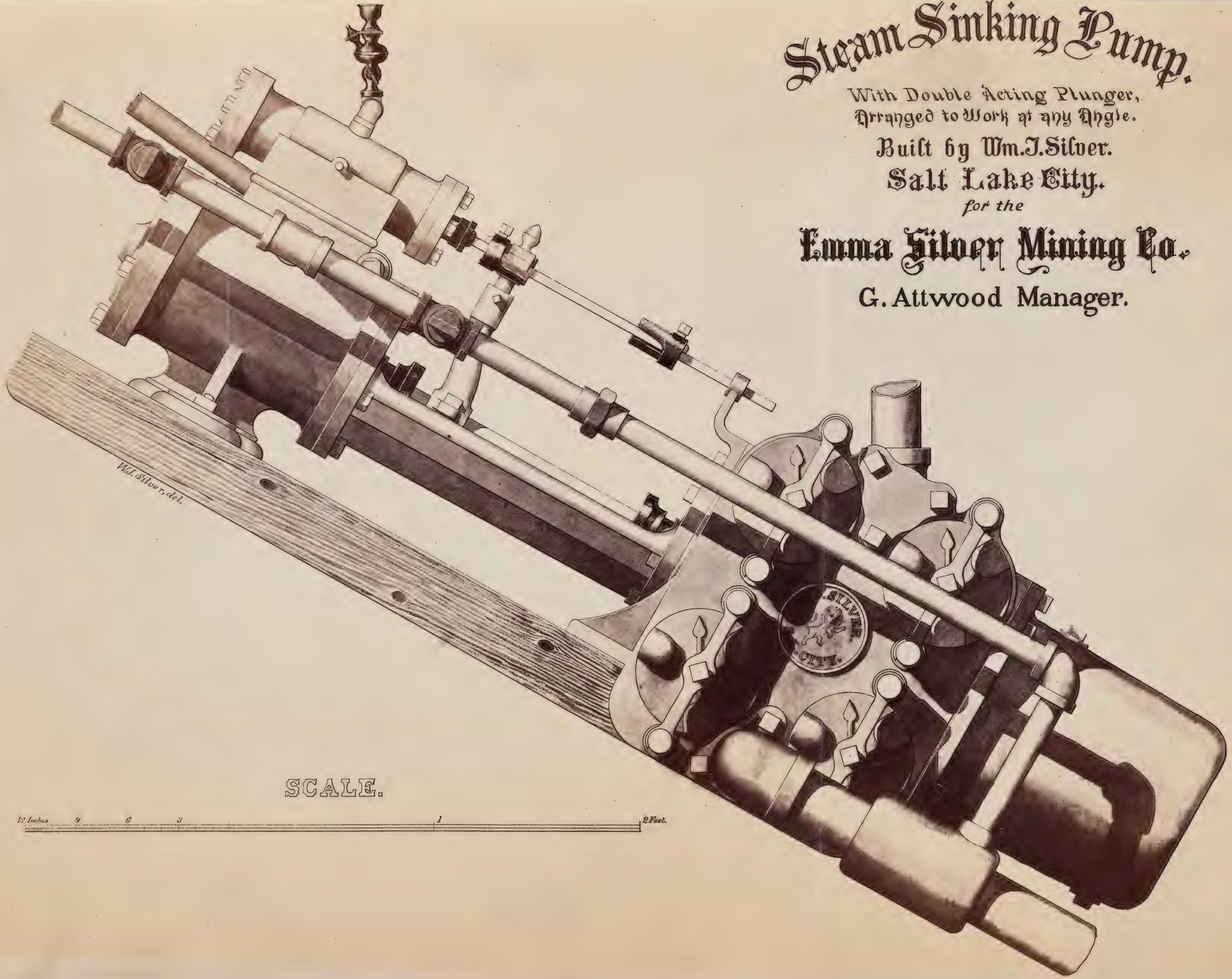
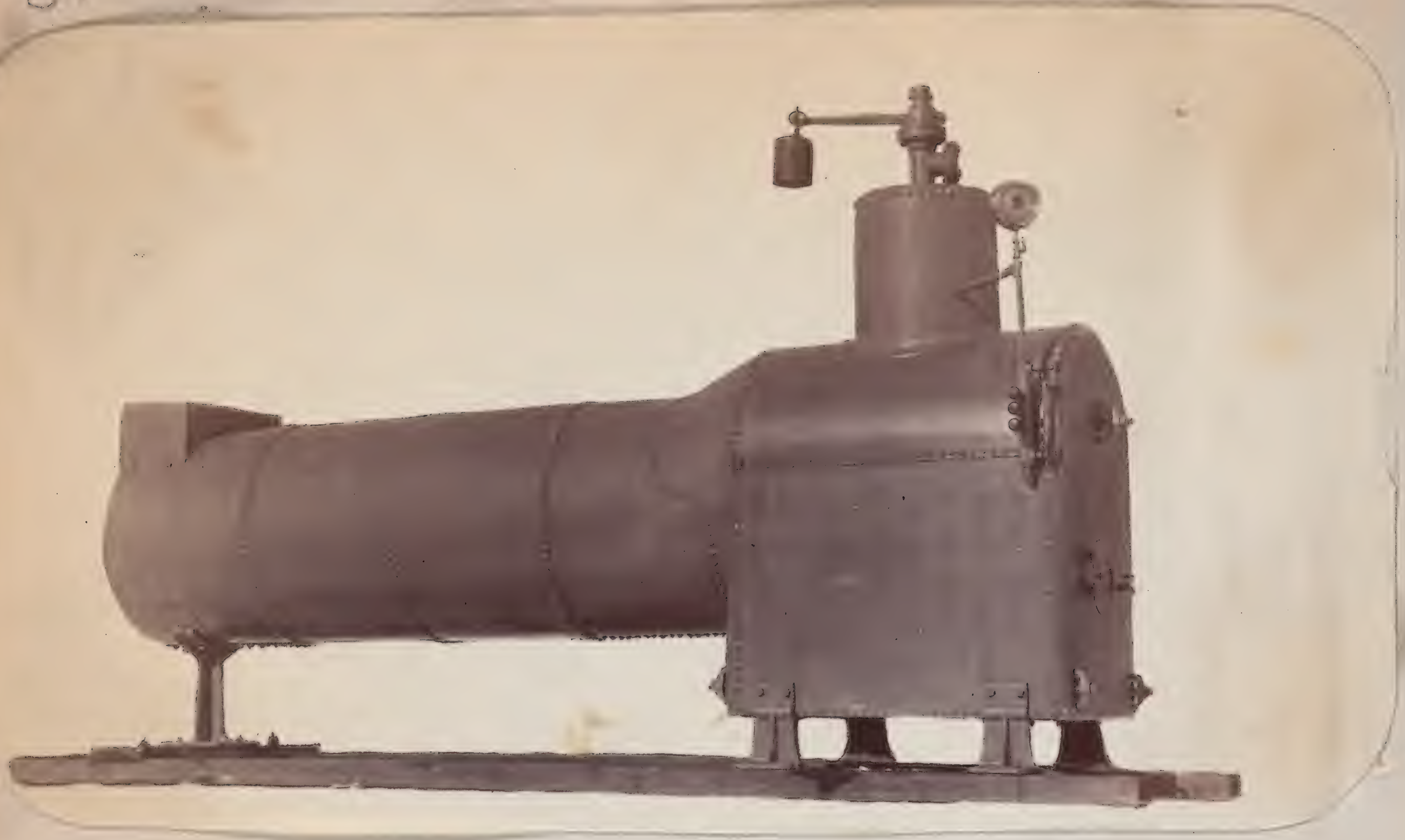
this book

Steam Sinking Pump.

With Double Acting Plunger,
Arranged to Work at any Angle.
Built by Wm. J. Silver.
Salt Lake City.
for the
Emma Silver Mining Co.
G. Attwood Manager.





40 Horse Power Tubular Boiler,

(LOCOMOTIVE PATTERN.)

This style of boiler is fast becoming a favorite on account of being portable, and not requiring masonry or other permanent fixtures.

PRINCIPAL DIMENSIONS:

Diameter of Boiler	3 ft. 6 in.	No. of Tubes	69
Length "	16 ft. 3 in.	Diameter of Tubes	2½ in.
Length of Fire-box	4 ft. 6 in.	Length "	10 ft.
Hight " "	3 ft. 8 in.	Grate surface	13½ sq. ft.
Width " "	3 ft. 1 in.	Total heating surface	490 sq. ft.

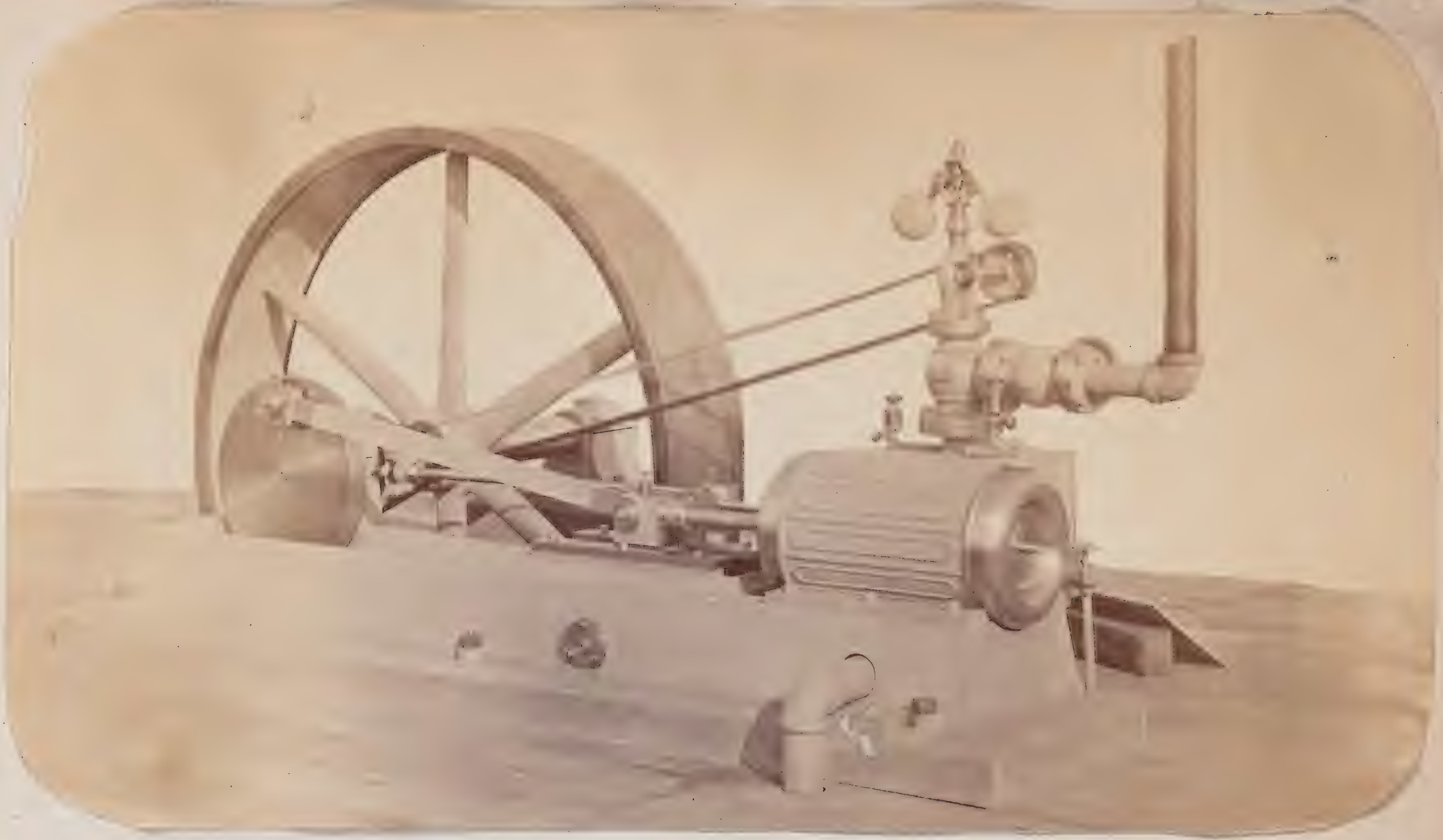
Wrought iron steam dome. Fire-box has an arched top and thoroughly stayed to the outside. The smoke-box is a continuation of the shell of the boiler, and is fitted with a large door, giving easy and complete access to the tubes. Wrought iron rings at the fire-door opening, and at the bottom of the fire-box.

Boiler is furnished with safety-valve, steam-guage, guage-cocks, glass water-guage, blow-off-cock, hand-hole plates, and grate-bars.

Weight.............................lbs. Price, $...............................

Cylinder, flue, tubular, and locomotive fire-box boilers of any size, made to order.
Prices furnished on application.

ATLAS WORKS, - - - INDIANAPOLIS, IND.



Stationary Engine.

New and improved patterns, with strong cast iron bed plate containing slides and main pillow block. Cylinder bolted to bed plate from the upper side, lagged with cast iron staves, polished cylinder head covers, spring or steam piston packing as may be preferred, steel piston rod, and crank pin, forged connecting rod with gun metal boxes, disc crank, wrought iron main shaft, and excentric rod, (this rod is fitted with a cam-hook which can be instantly disconnected from the valve stem, and the engine worked by hand), improved balanced slide valve (patented), outboard pillow block, Judson governor, stop valve, starting lever, wrenches, etc., complete.

Diameter of cylinder.................... ....inches.
Stroke of piston..inches.
Horse power..
Diameter of fly wheel...feet.
Price without band pully. $......... ....

———:o:———

Band pulleys of any diameter and width of face furnished.

ATLAS WORKS, - - - INDIANAPOLIS, IND.

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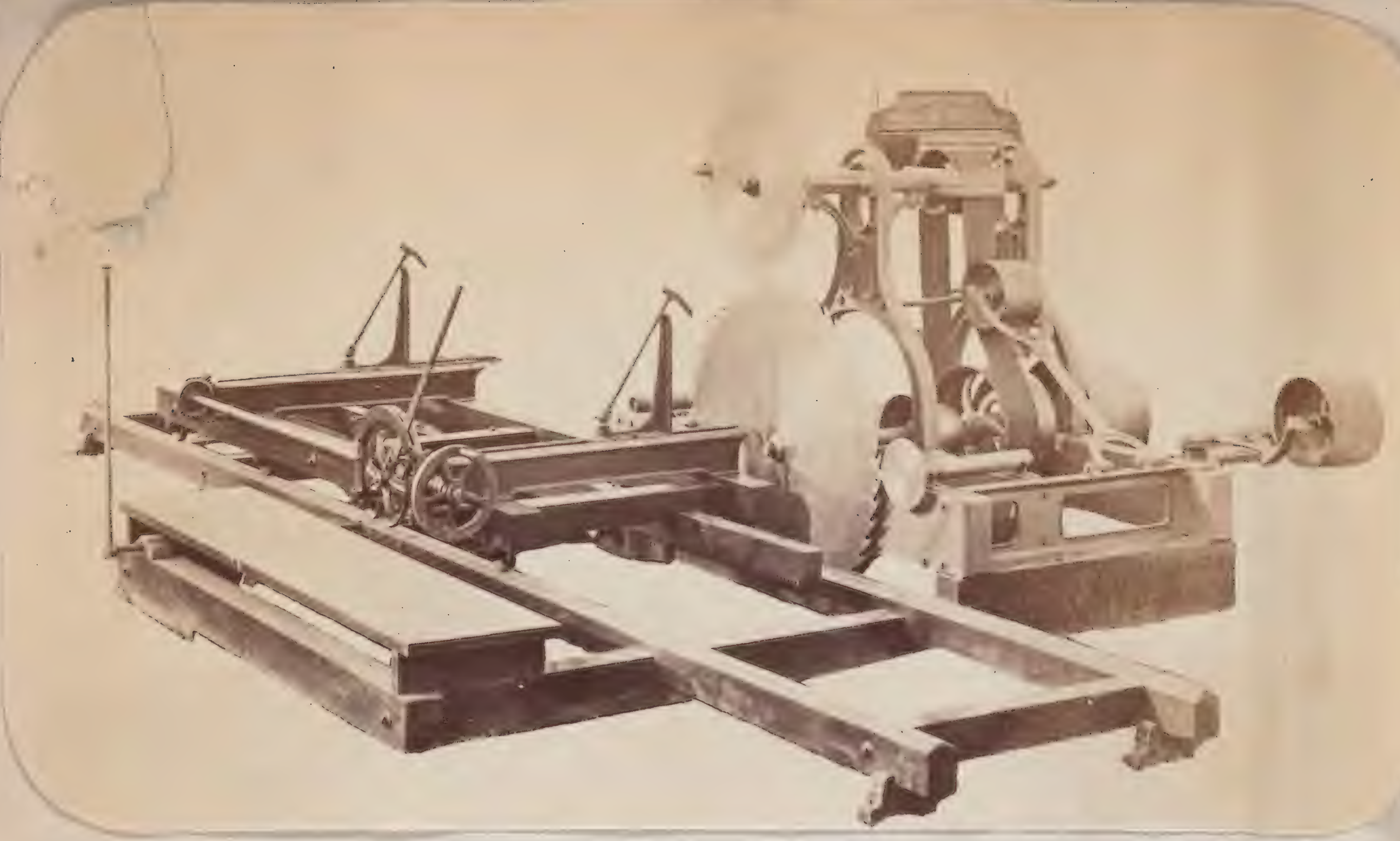


Portable Circular Saw Mills.

The lower frame is a combination of iron and wood, the top frame is exclusively of iron, and securely bolted to the lower frame, making the mill self contained, including the feed works. The upper and lower saw mandrels are made of cast steel, and run in the best anti-friction metal boxes. The main driving pulley is placed outside of the framing, enabling the off-bearer to remove the lumber, slabs, etc., without coming in contact with either the main belt or carriage. The upper saw mandrel is adjustable, and can be rigidly held at any desired point. The belt tighteners for both the upper and lower mandrel pulleys are pivoted, and can be instantly thrown off when not needed. The feed works are the strongest and simplest in use, and so arranged as to be under the complete control of the operator without having to leave his post. Each mill is furnished with the latest improved patent lever set head blocks, wrenches, etc., complete.

Price, with 30 feet of carriage:

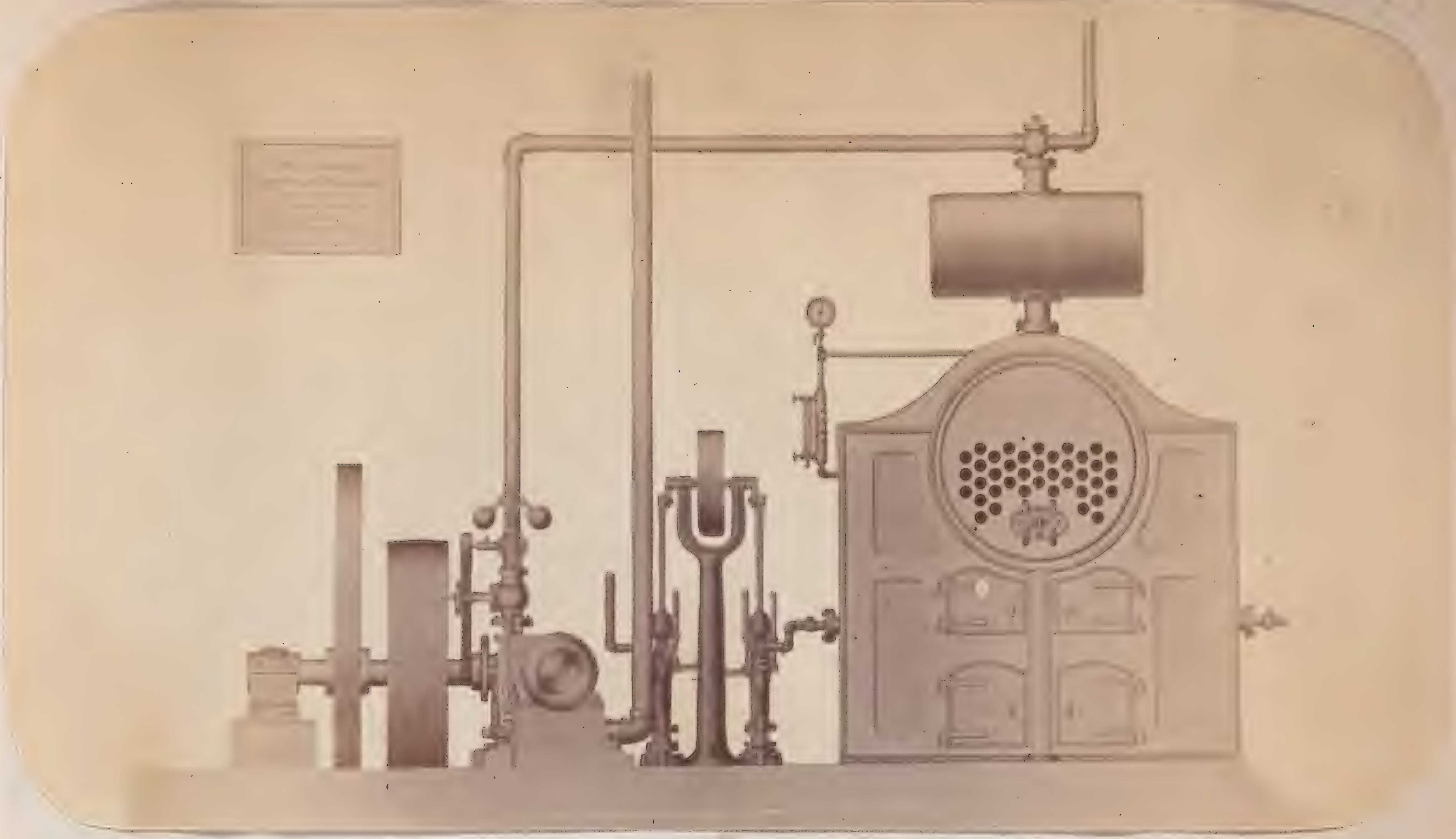
DOUBLE MILLS.

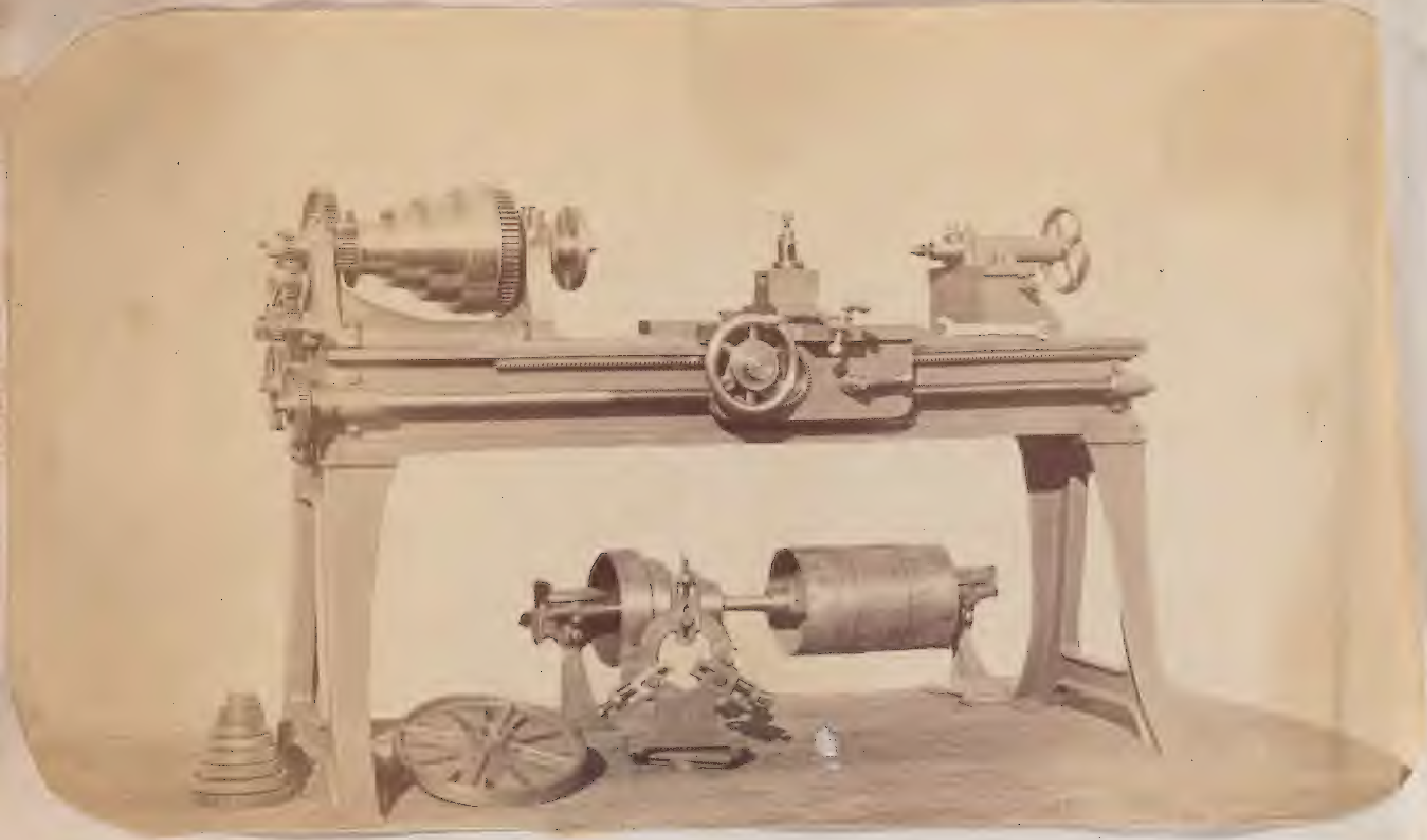
50 in. and 30 in. saws.........	$..............................
52 in. " 30 in. "	$..............................
54 in. " 30 in. "	$..............................
56 in. " 30 in. "	$..............................
58 in. " 30 in. "	$..............................
60 in. " 30 in. "	$..............................

SINGLE MILLS.

50 in. saw.........................	$..............................
52 in. "	$..............................
54 in. "	$..............................
56 in. "	$..............................
58 in. "	$..............................
60 in. "	$..............................

ATLAS WORKS, - - - INDIANAPOLIS, IND.





Sixteen Inch Engine Lathe.

Double geared; swings seventeen inches over the bed and eleven inches over the carriage; steel spindles; gun metal boxes with hardened cast steel step to receive thrust of spindle; the screw is splined and carries a steel worm operating a very simple and substantial friction feed, which may be instantly disconnected and the carriage operated by a quick hand movement. The screw is used only for screw cutting and is furnished with a set of change gears. The carriage is gibbed to the bed and is fitted with a plain poppet block. Each Lathe is furnished with large and small face plates; water pot on adjustable standard; center rest; counter shaft and wrenches.

Wrought iron work subject to wear, case hardened.

Length between centers, - - - - - - 3 ft.
Whole length of Bed, - - - - - - 6 ft.
Price, $.................................
Price per extra foot of bed, $.................................
Boxing and hauling extra, at cost.

ATLAS WORKS, - - - INDIANAPOLIS, IND.

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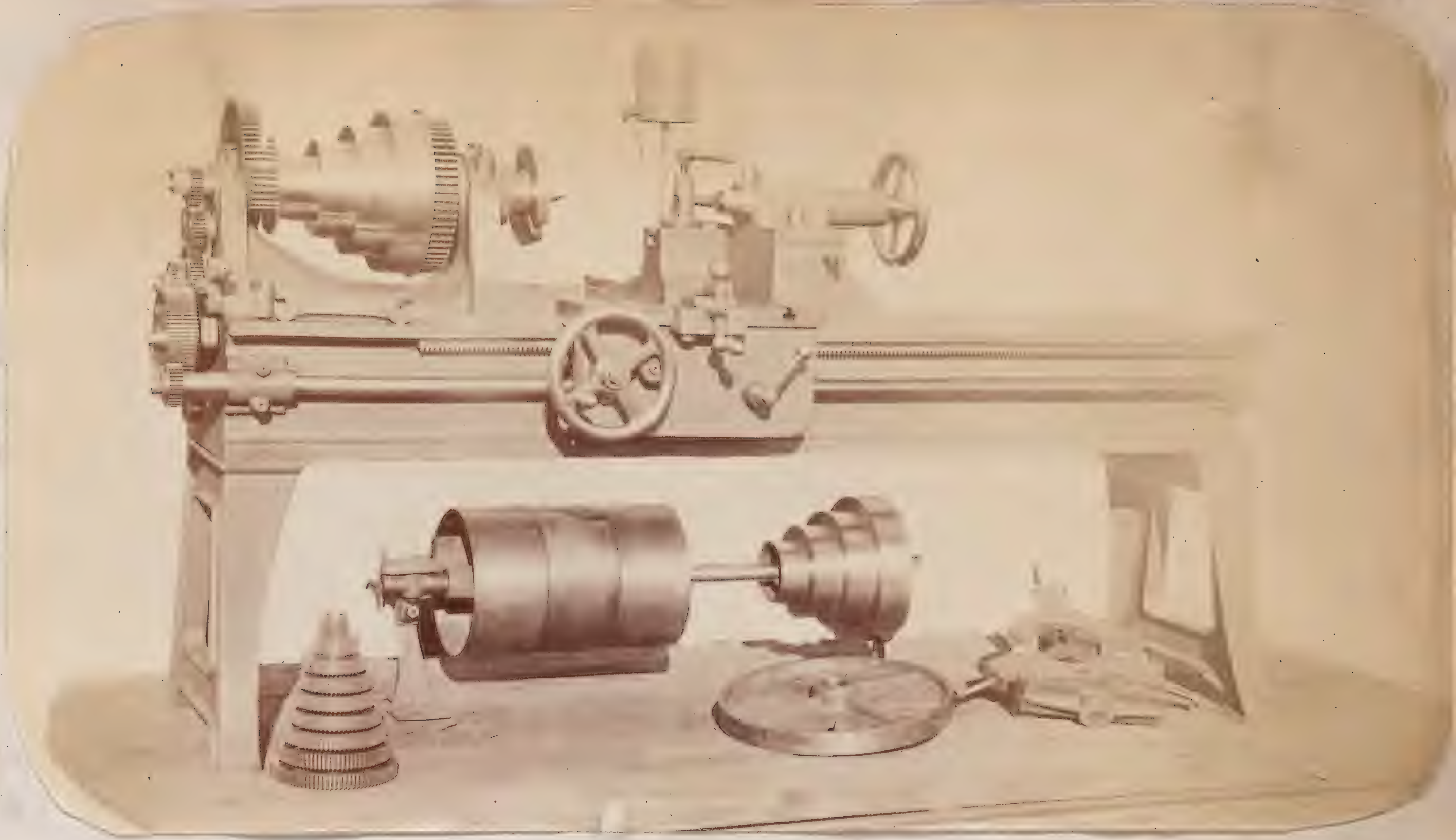
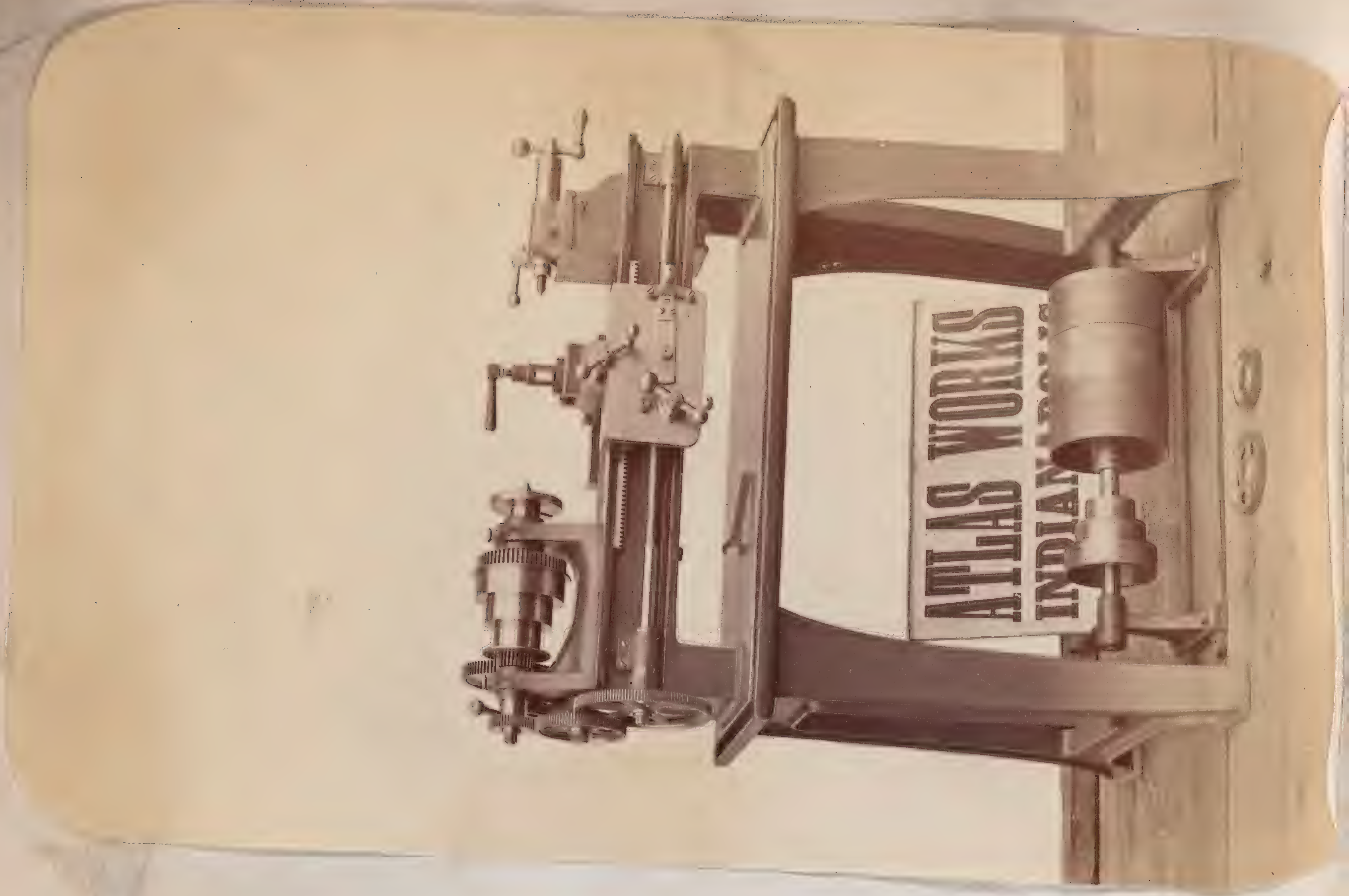


Twenty Inch Engine Lathe.

Double geared; swings twenty-one inches over the slides and thirteen and one-half inches over the carriage; steel spindles; gun metal boxes, with hardened cast steel step to receive thrust of spindle; plain poppet block; quick hand movement to carriage; wrought-iron rack and pinion; center rest; large and small face plates; water pot on adjustable standard; set of screw gears; counter shaft with ball and socket hangers; case hardened nuts and bolts; wrenches, etc.

Length between centers, - - - - 4 ft.
Whole length of bed, - - - - - 7 ft. 6 in.
Price, $..............................
Price per extra foot of bed, $..............................
Boxing and hauling extra, at cost.

ATLAS WORKS, - - - INDIANAPOLIS, IND.



# Sewing Machine Lathe.

Swings eleven inches over the bed and seven and one-half inches over the carriage. Double or single geared, as ordered; steel spindles; gun metal boxes; hardened cast steel step to receive thrust of spindle, which is so fitted that all end motion of the spindle is entirely prevented. Carriage gibbed to bed. Wrought iron rack and pinion. quick hand movement to carriage; geared screw feed with three changes; cone turned inside and perfectly balanced. Table with planed top and oil channel around outer edge. Each Lathe furnished with one face plate, wrenches and counter shaft.

Distance between centers, - - - - 15 inches.
Whole length of Machine, - - - - 42 inches.
Price; double geared, $..
Price, single geared, $..
Boxing and hauling extra, at cost.

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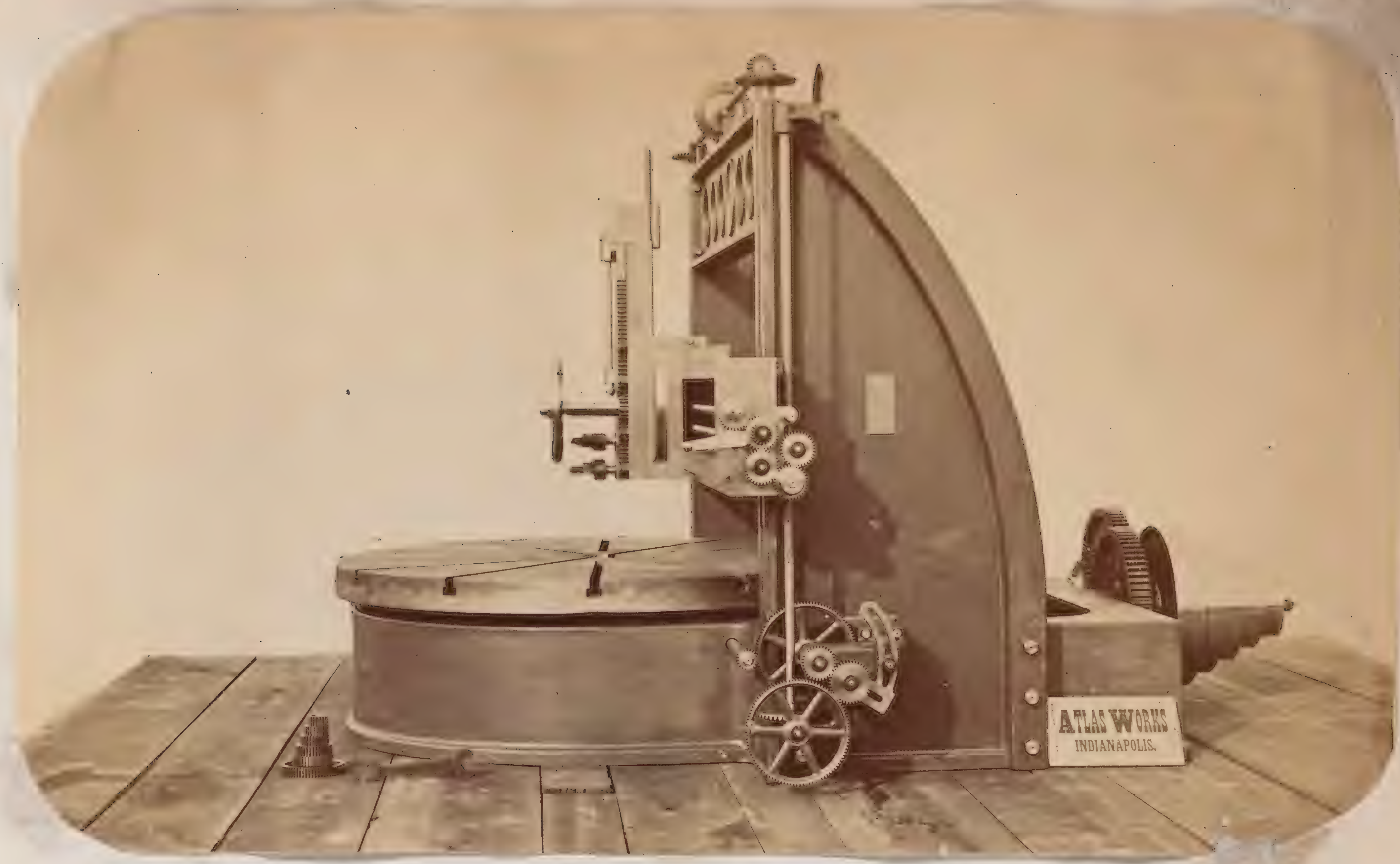

Boring and Turning Mill.

Arranged to bore and turn at any angle; self-acting geared screw feed with a set of change gears giving a range of feed varying from 5 to 45 per inch. Quick hand movement to sliding head and boring bar, either of which may be operated at the end of the cross head. The cone has five changes, double geared, giving ten different speeds to the table. The cross head is raised and lowered by power by means of an independent counter-shaft. The mill is self contained, and has no parts extending below the floor. The framing is so arranged that a pit may be left in the foundation to collect the boring chips.

Main counter-shaft has 24 inch tight and loose pulleys, for a 6 inch belt. Cones turned inside and perfectly balanced. Ball and socket hangers, wrenches, etc., complete.

96 inch swing, $..........
108 inch swing, $..........
120 inch swing, $..........

Boxing and hauling extra at cost.

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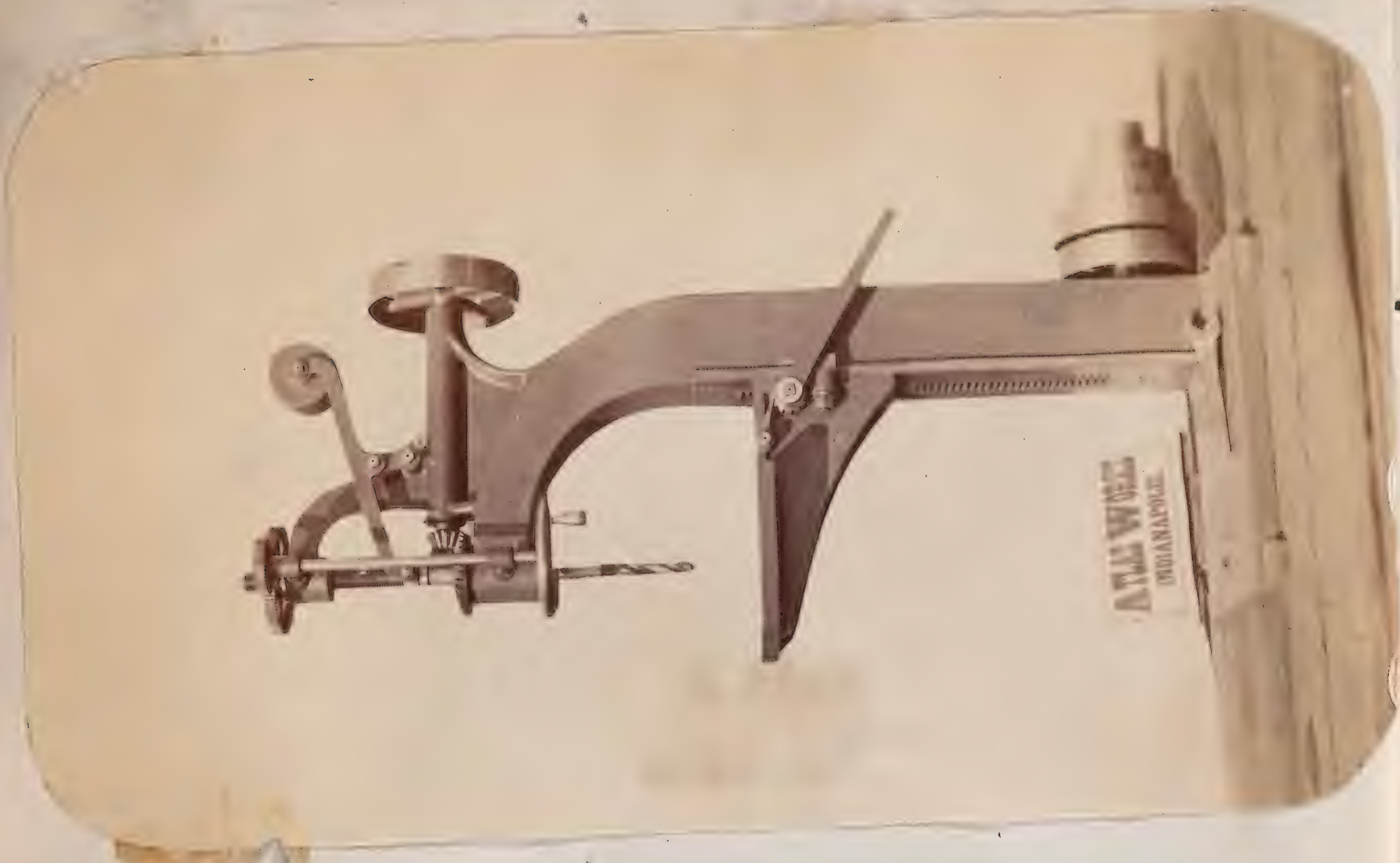


Thirty Inch Upright Drill.

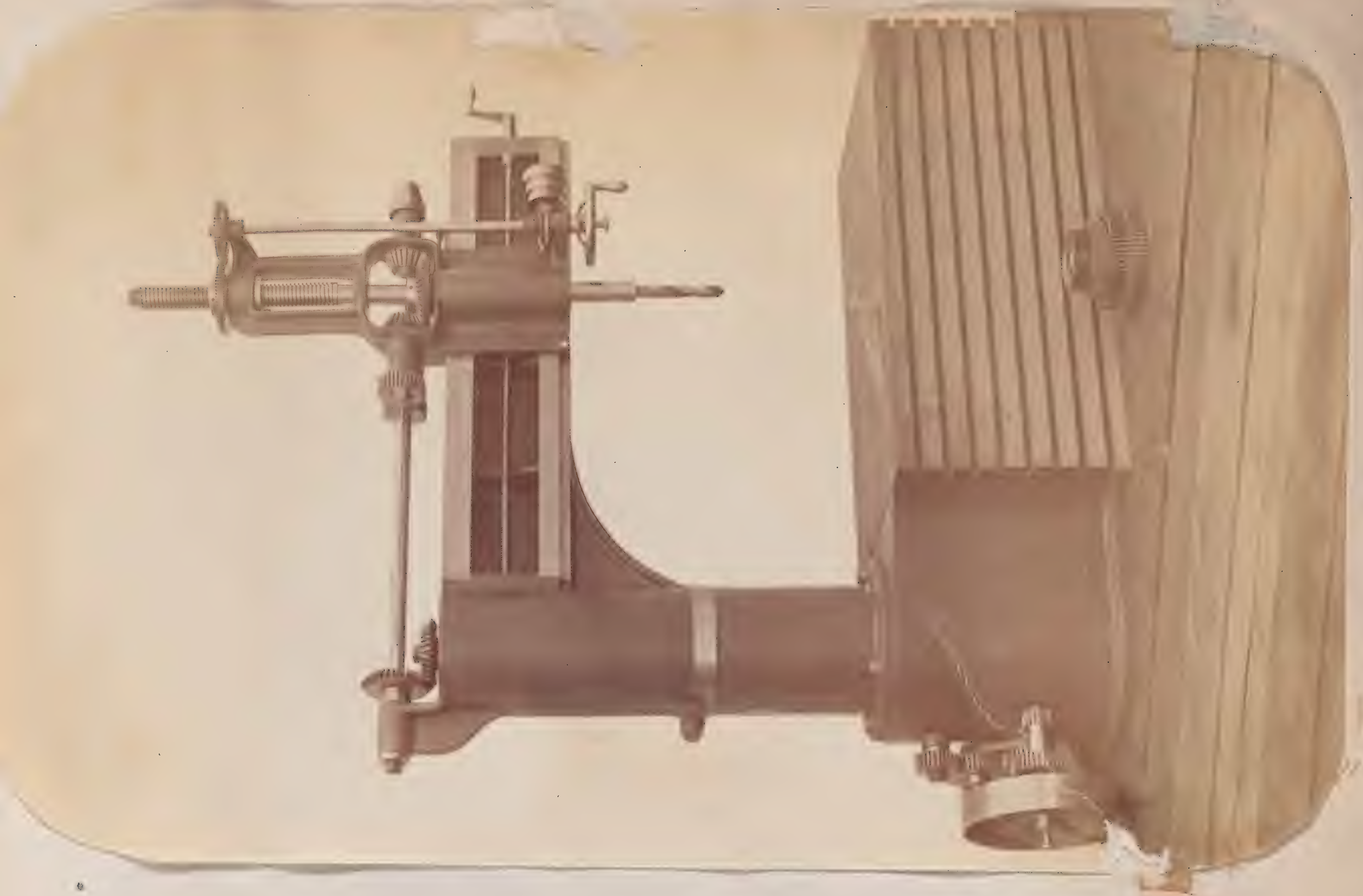
Drills to the center of thirty inches; spindle has seven inches traverse, and, counter-balanced; feed operated by hand; table adjustable by means of rack and pinion; base projects beyond center of drill, giving increased surface; cone pulley with four changes at the base of column; the pinion shaft is driven by a pulley, instead of a cone, to relieve the top of the machine of the increased weight when a cone is used.

Counter-shaft; wrenches, etc.

Price, $.............................

Boxing and hauling extra, at cost.

ATLAS WORKS, - - - INDIANAPOLIS, IND.



FORM—D 2.

Five Feet Radial Drill.

The arm or jib has a radius of five feet from the center of the column to the center of the drill spindle. Base has large vertical and horizontal faces, with slots for bolting work. Drill spindle 2½ inches diameter, 16 inches traverse, with hand and power feed. Distance from top of table to under side of arm 36 inches. (This distance will be increased if desired).

The driving pulley has a constant velocity, and the gears so arranged that the exact speed for any given drill can be secured by simply changing one gear, which gives the machine a range of velocities which can not be obtained by means of a cone and back gears. A door is fitted in one end of the table, with lock and key, making a very convenient tool closet.

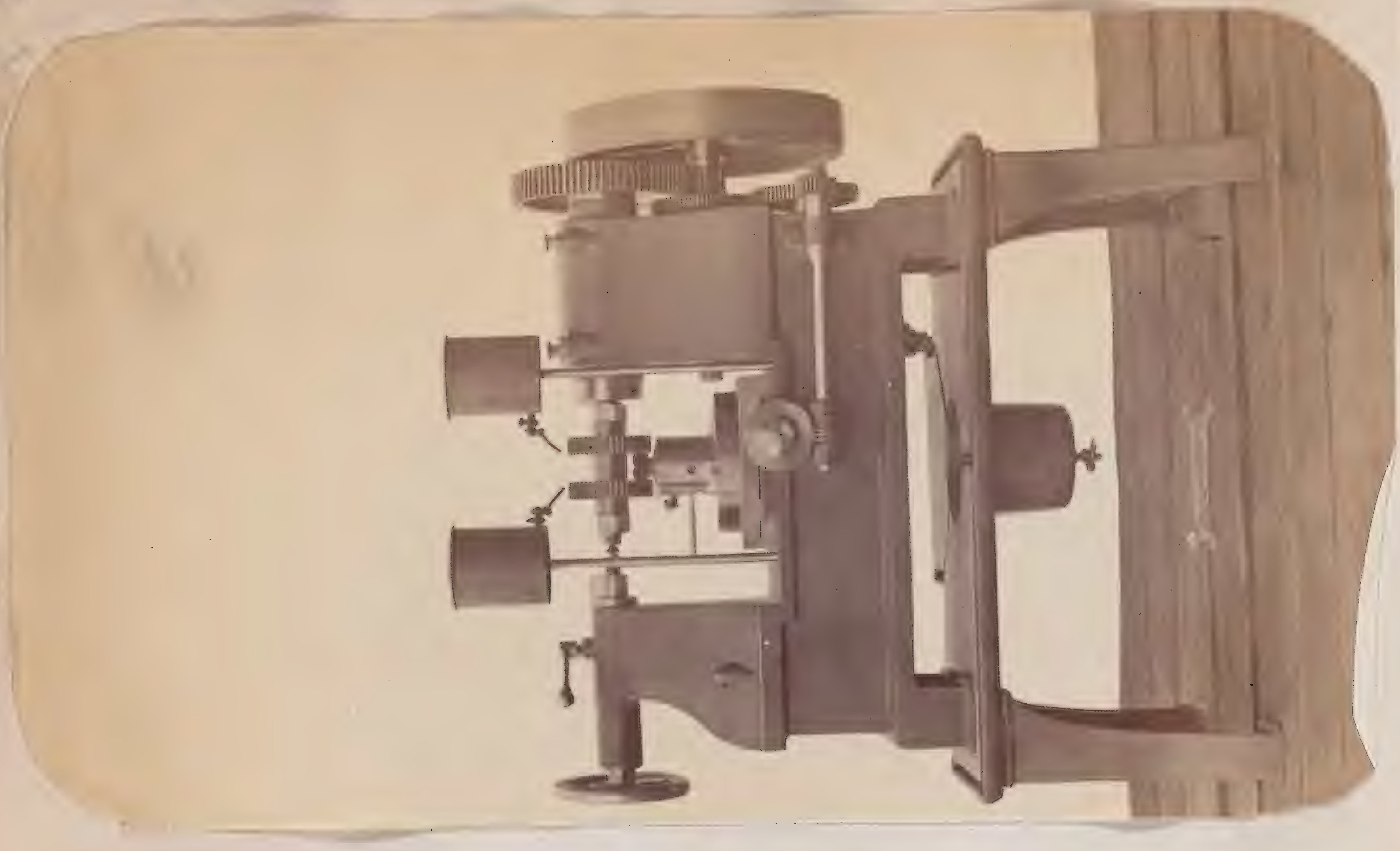
Counter-shafts, wrenches, etc.

Price, $____________________

Boxing and hauling extra at cost.

ATLAS WORKS, - - - INDIANAPOLIS, IND.

41



Nut Milling Machine.

Has a range of capacity from $\frac{1}{4}$ inch to 2 inch nuts. Mills two opposite sides at once; revolving chuck so arranged that either Square or Hexagonal nuts may be milled. Self feed with quick hand movement. Two oil tanks for supplying oil to the cutters. Base has a planed top, oil channels and reservoir with strainer for collecting the oil. Milling arbor $1\frac{1}{2}$ inches diameter, fitted with a conical bearing in main spindle. Cutters are 6 inches diameter. Bolts from $\frac{1}{4}$ to 2 inches diameter, not exceeding 15 inches in length can be milled in this machine. Counter-shafts, wrenches, etc.

Price, including one pair of cutters, and one sample bushing on milling arbor, one sample bushing in chuck, and one nut arbor in chuck bushing, $..............

Price of bushings for milling arbor, $\frac{1}{4}$ to $1\frac{1}{2}$ inches, - $..............

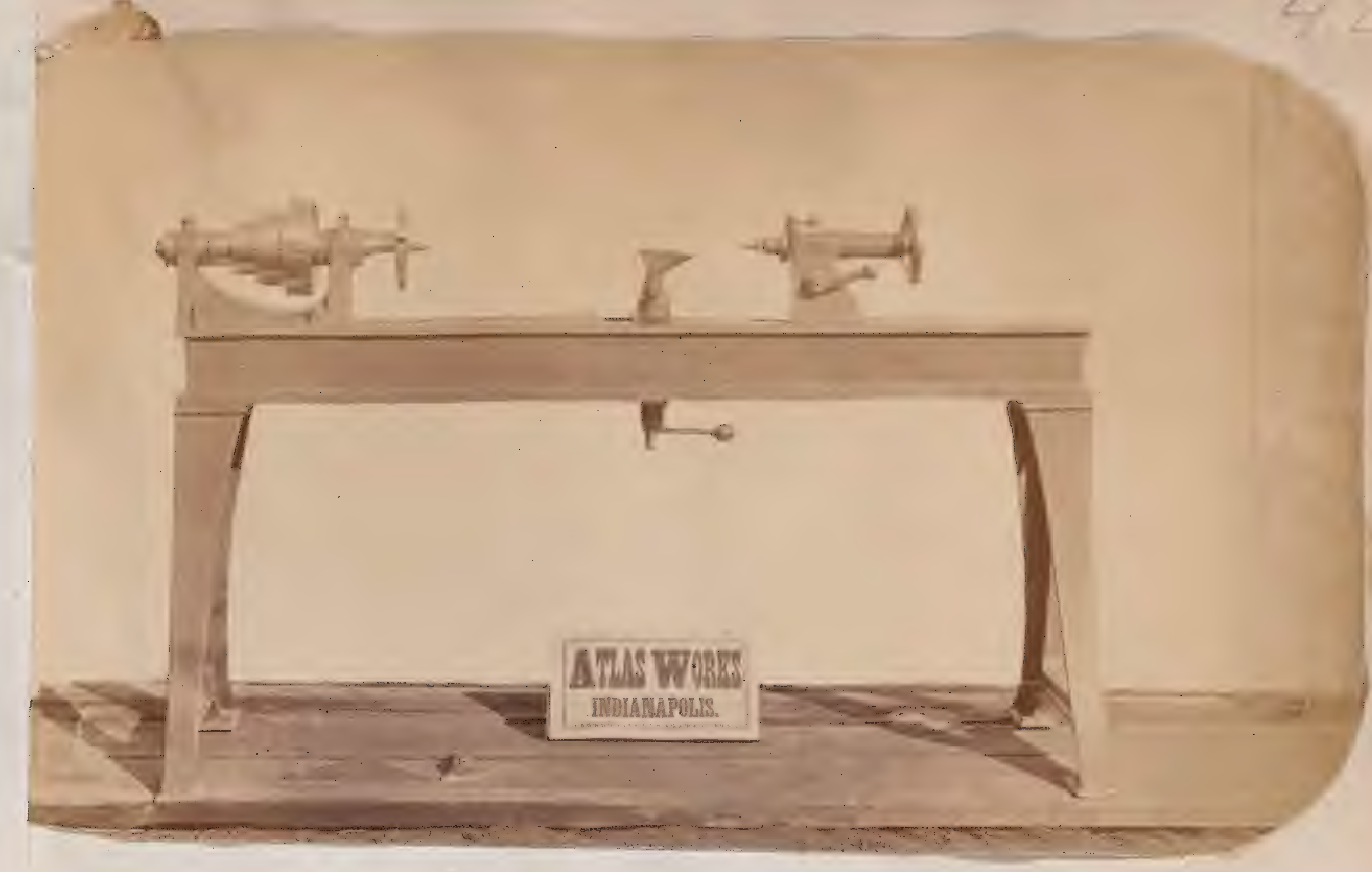
Price of bushings for chuck, $\frac{1}{4}$ to $1\frac{1}{2}$ inches, - - $..............

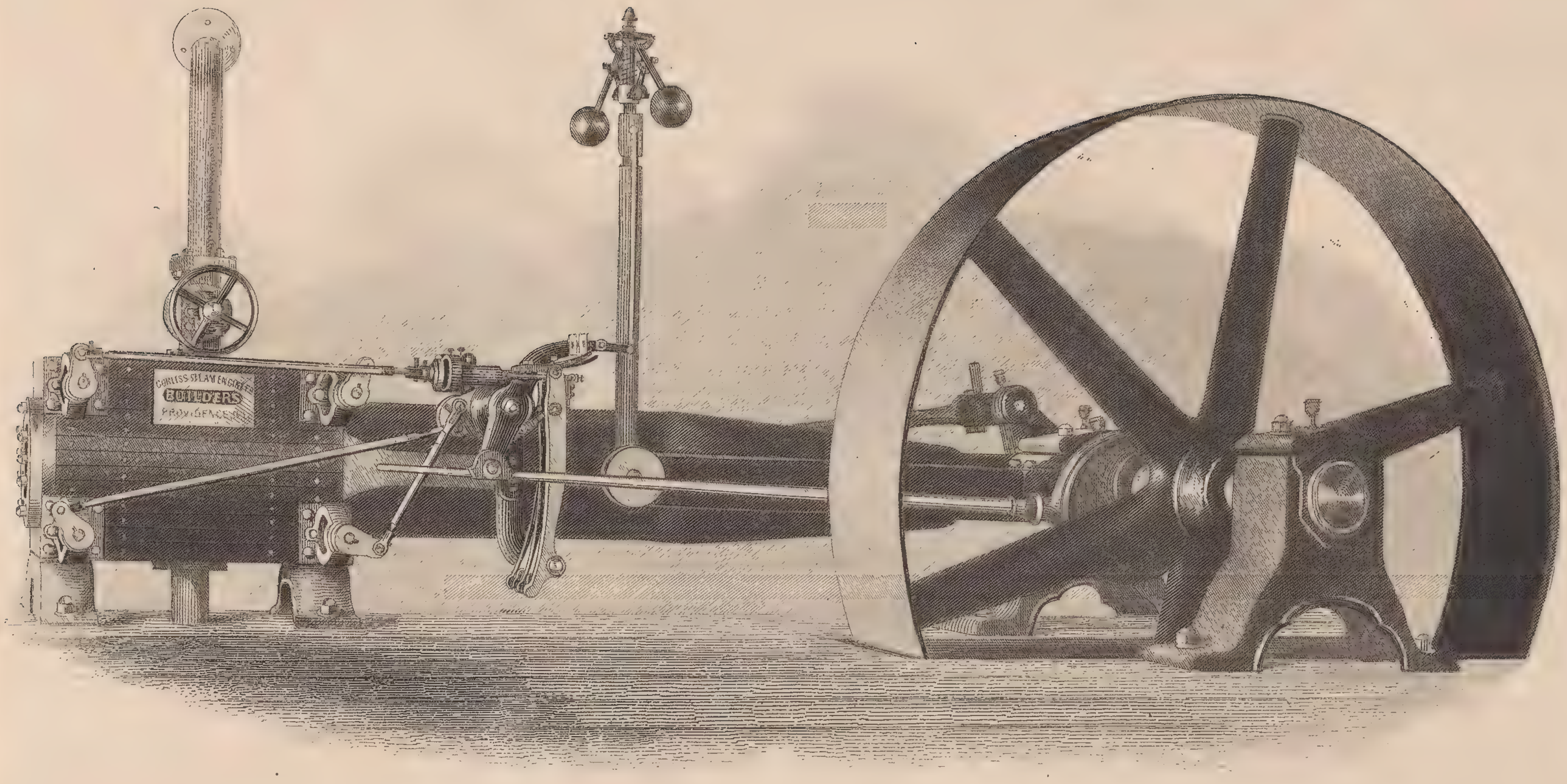
Price of nut arbors, $\frac{1}{4}$ to $1\frac{1}{2}$ inches, - - - $..............

Boxing and hauling extra at cost.

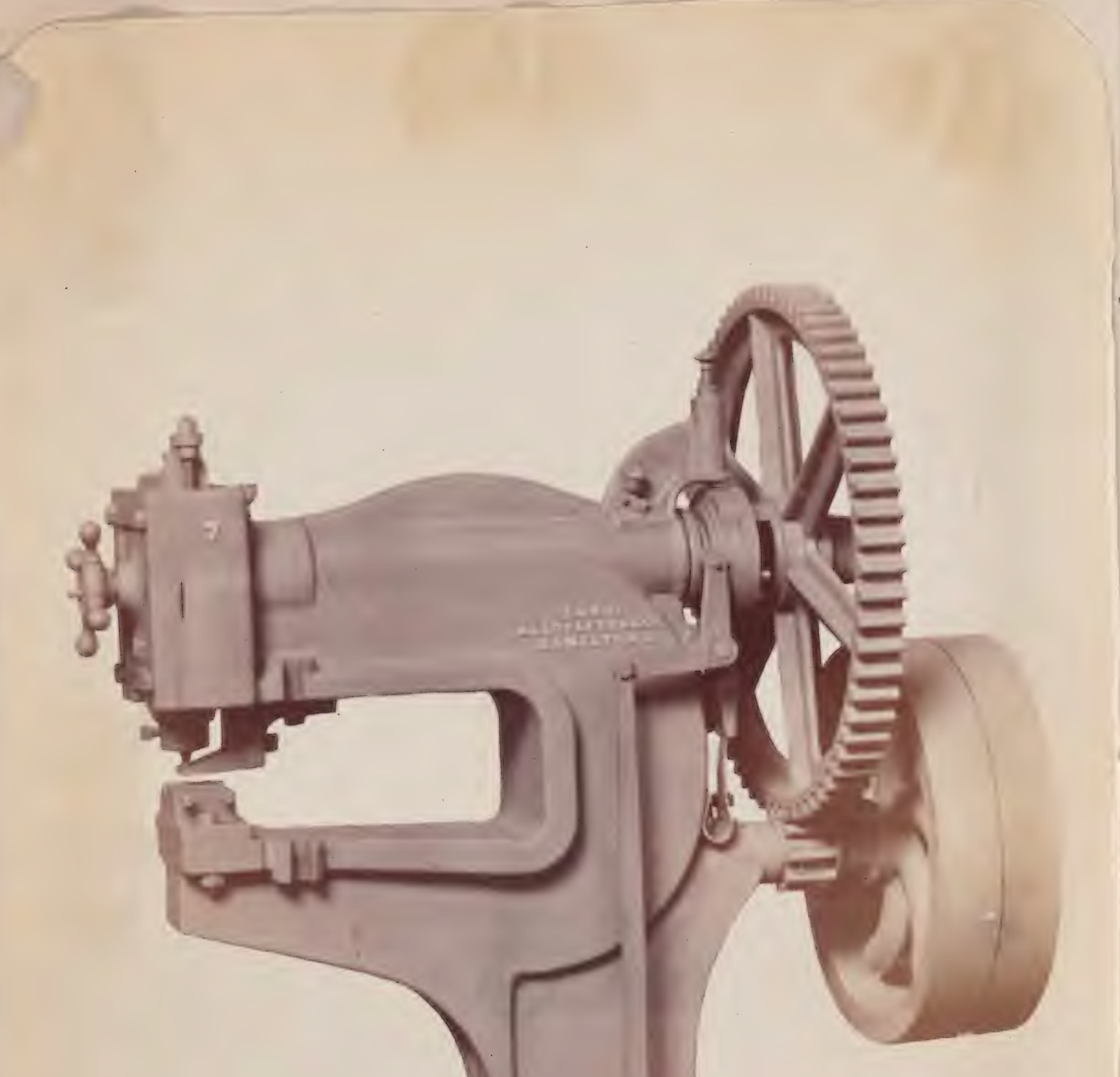
ATLAS WORKS, - - - INDIANAPOLIS, IND.

42

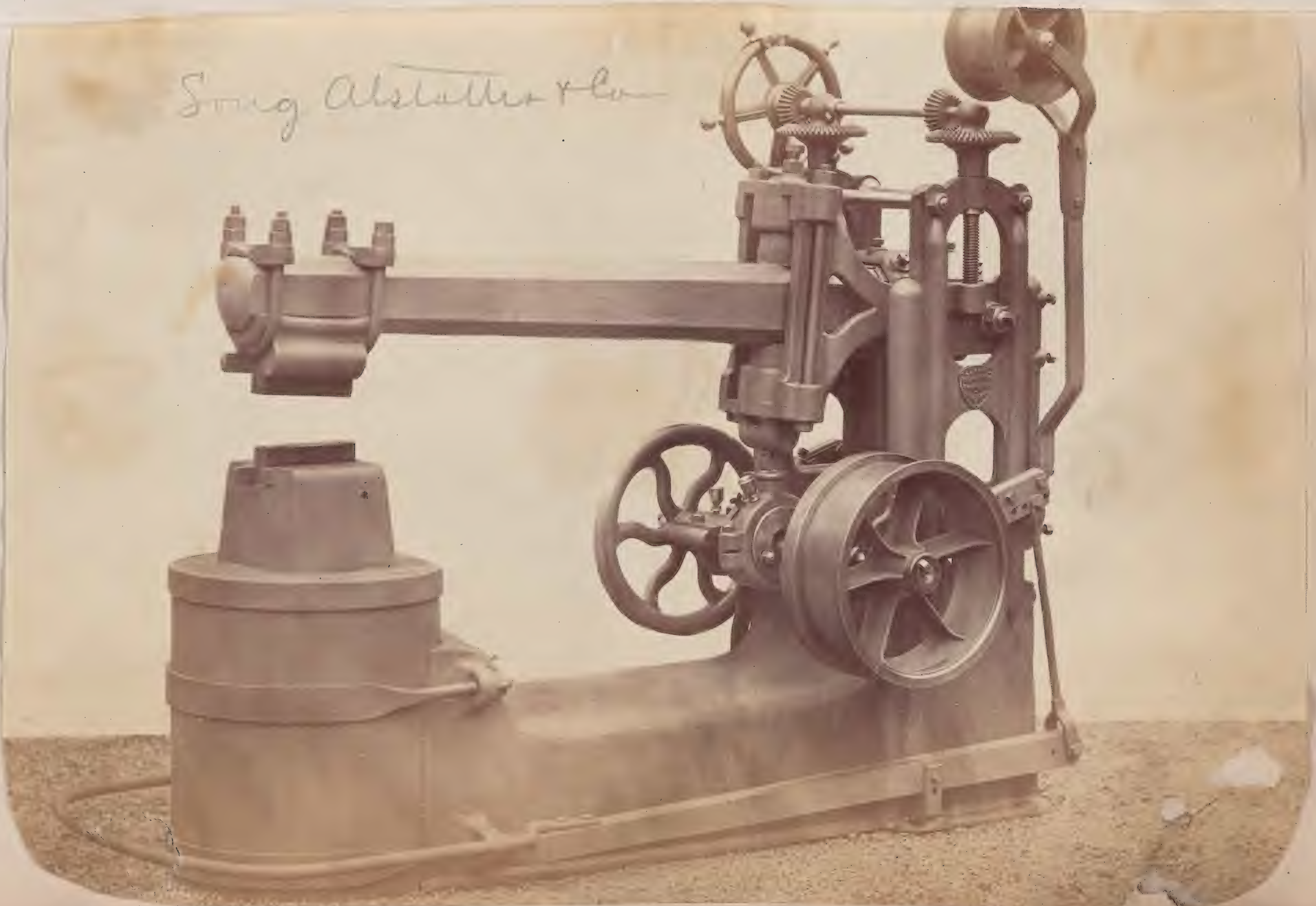



CORLISS STEAM ENGINE CO.
BUILDERS
PROVIDENCE R.I.

CORLISS ENGINE.



Long Alstatter &Co



Long Alstatter & Co

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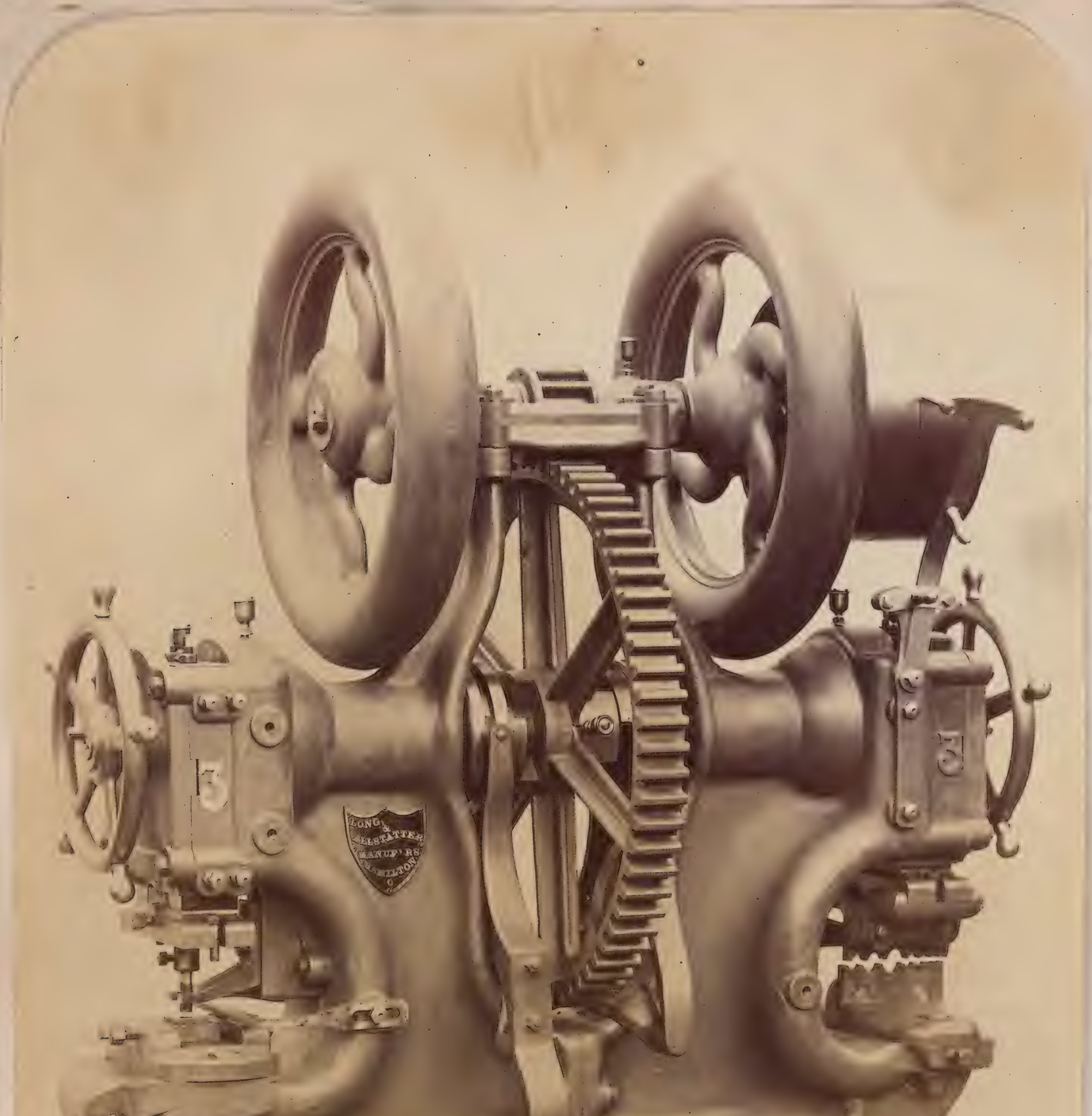

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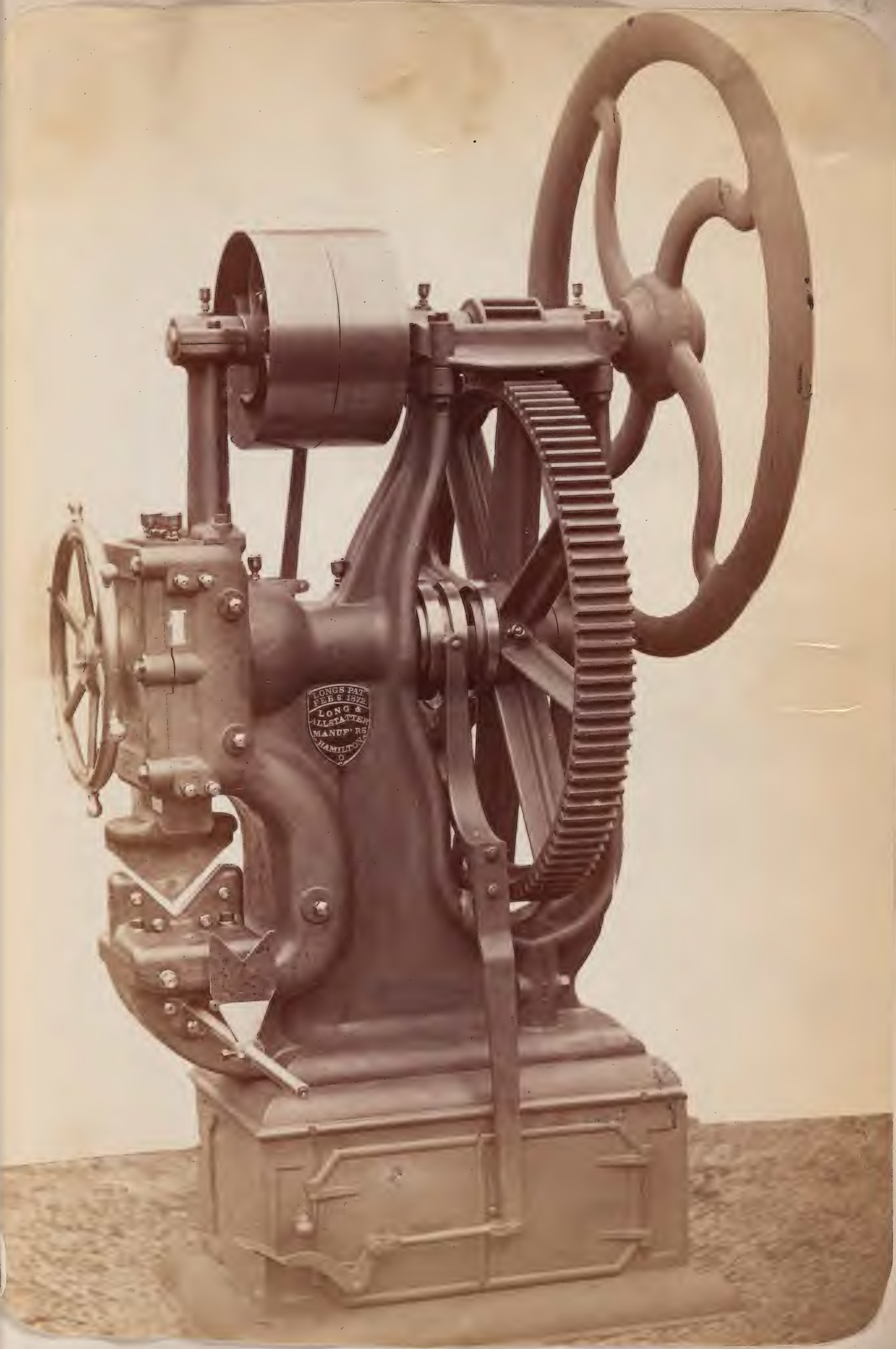
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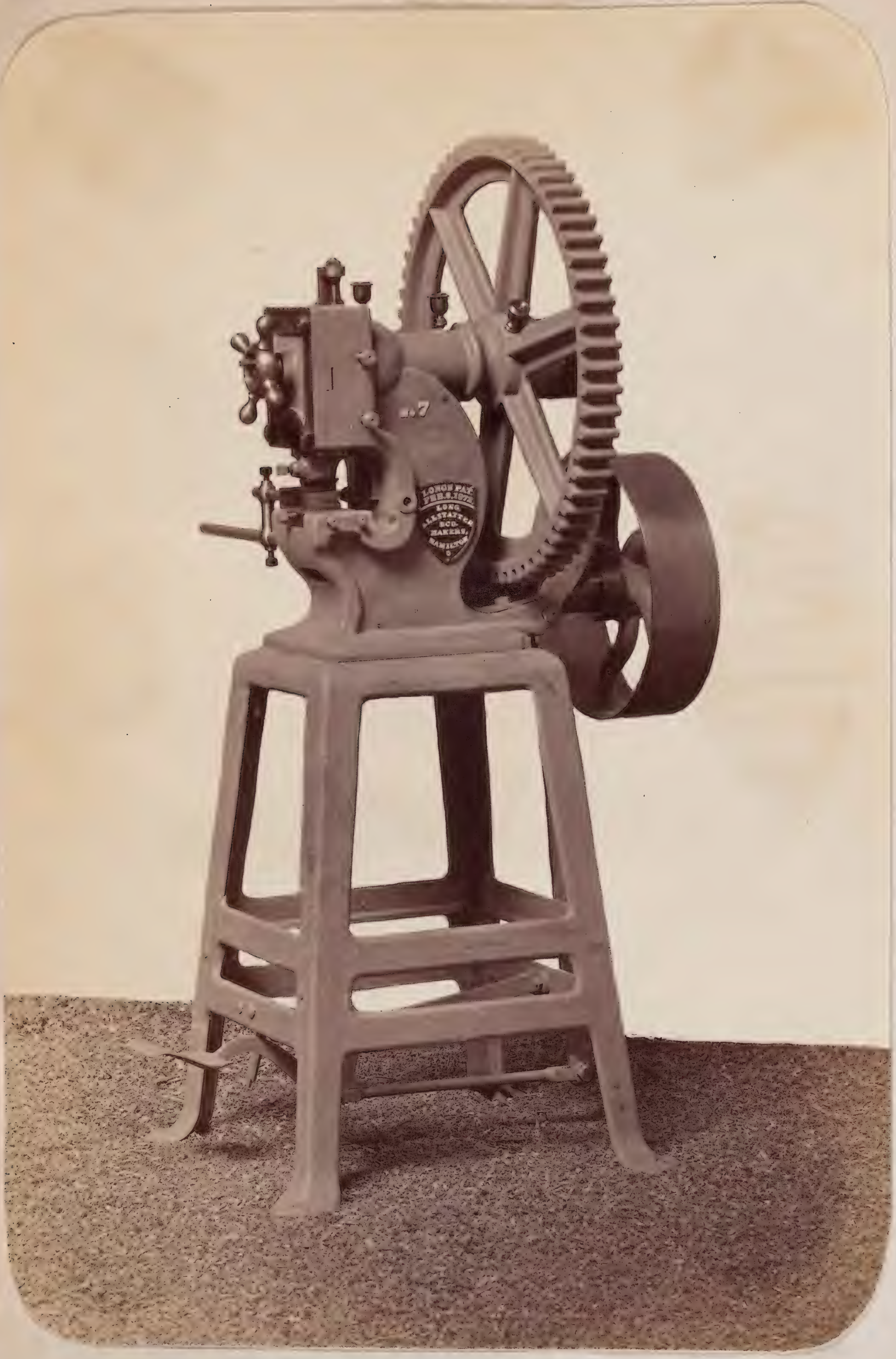
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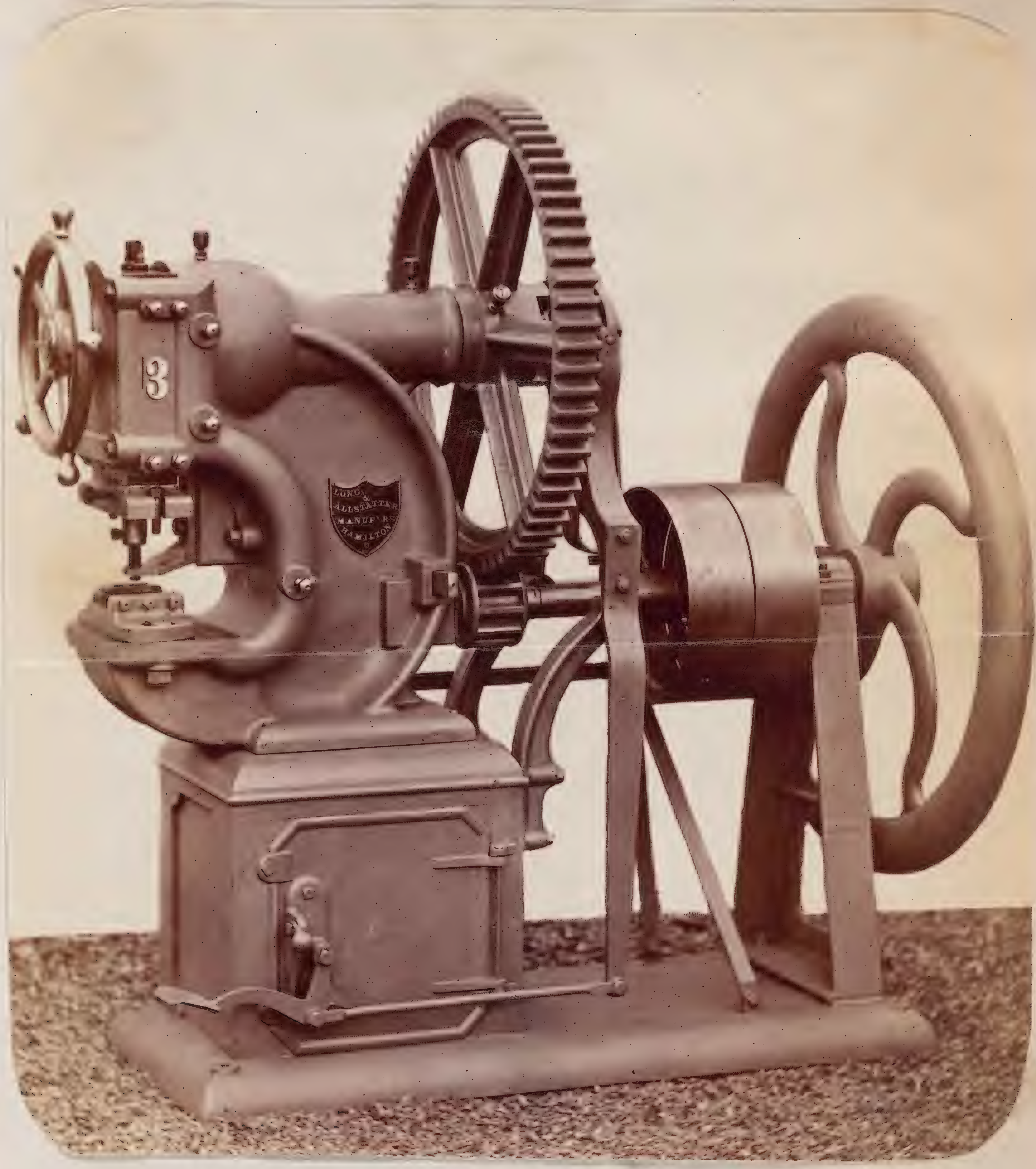
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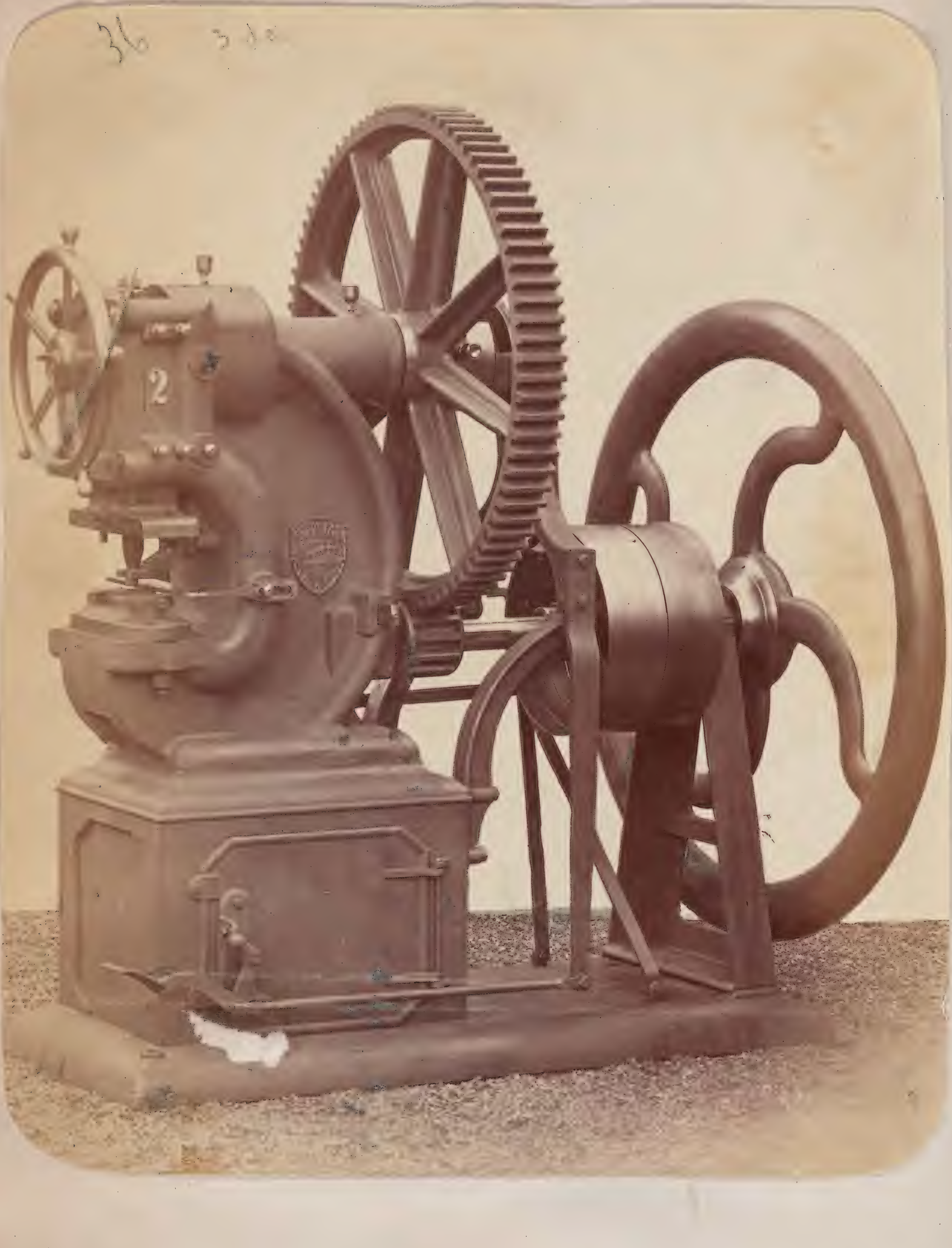
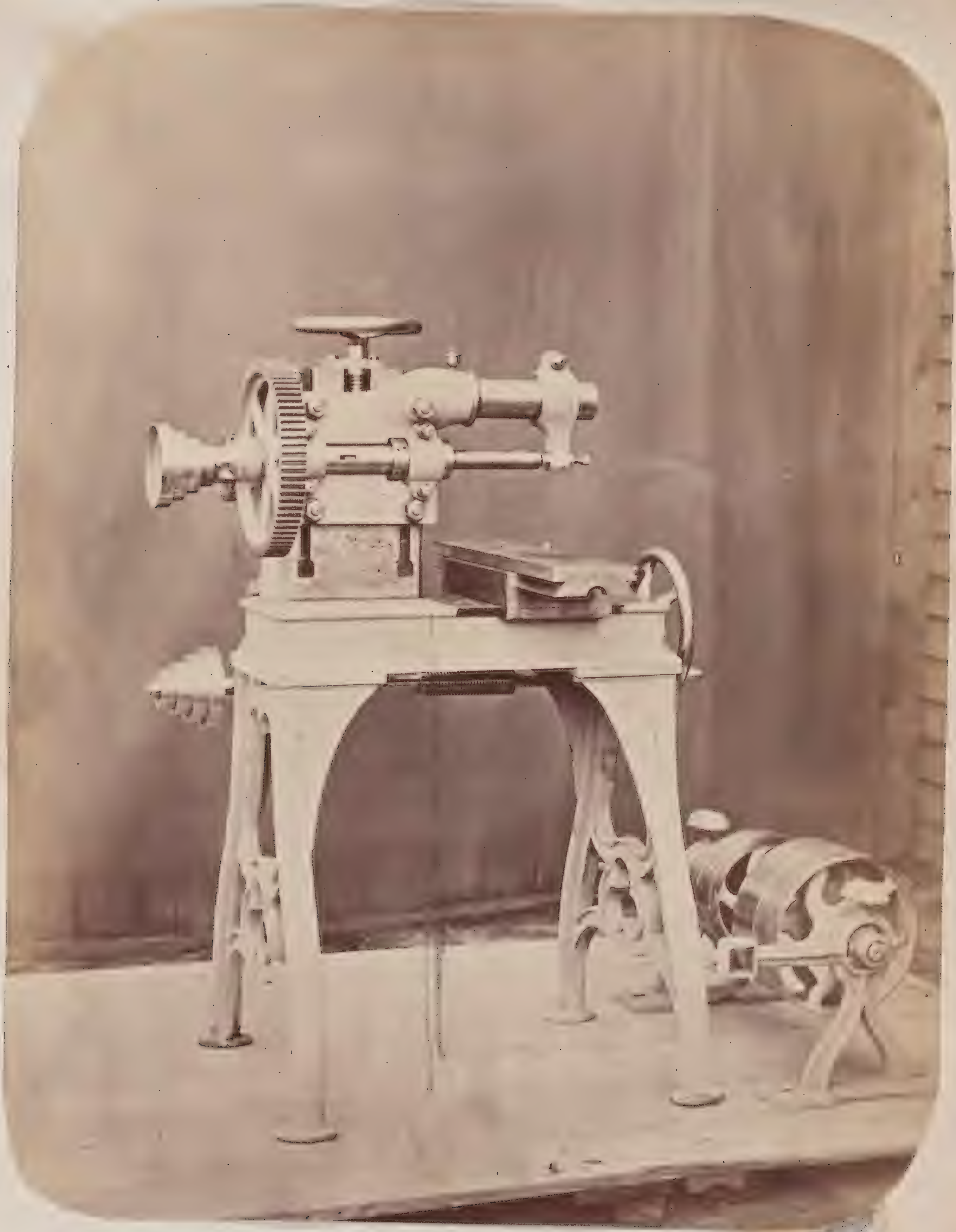
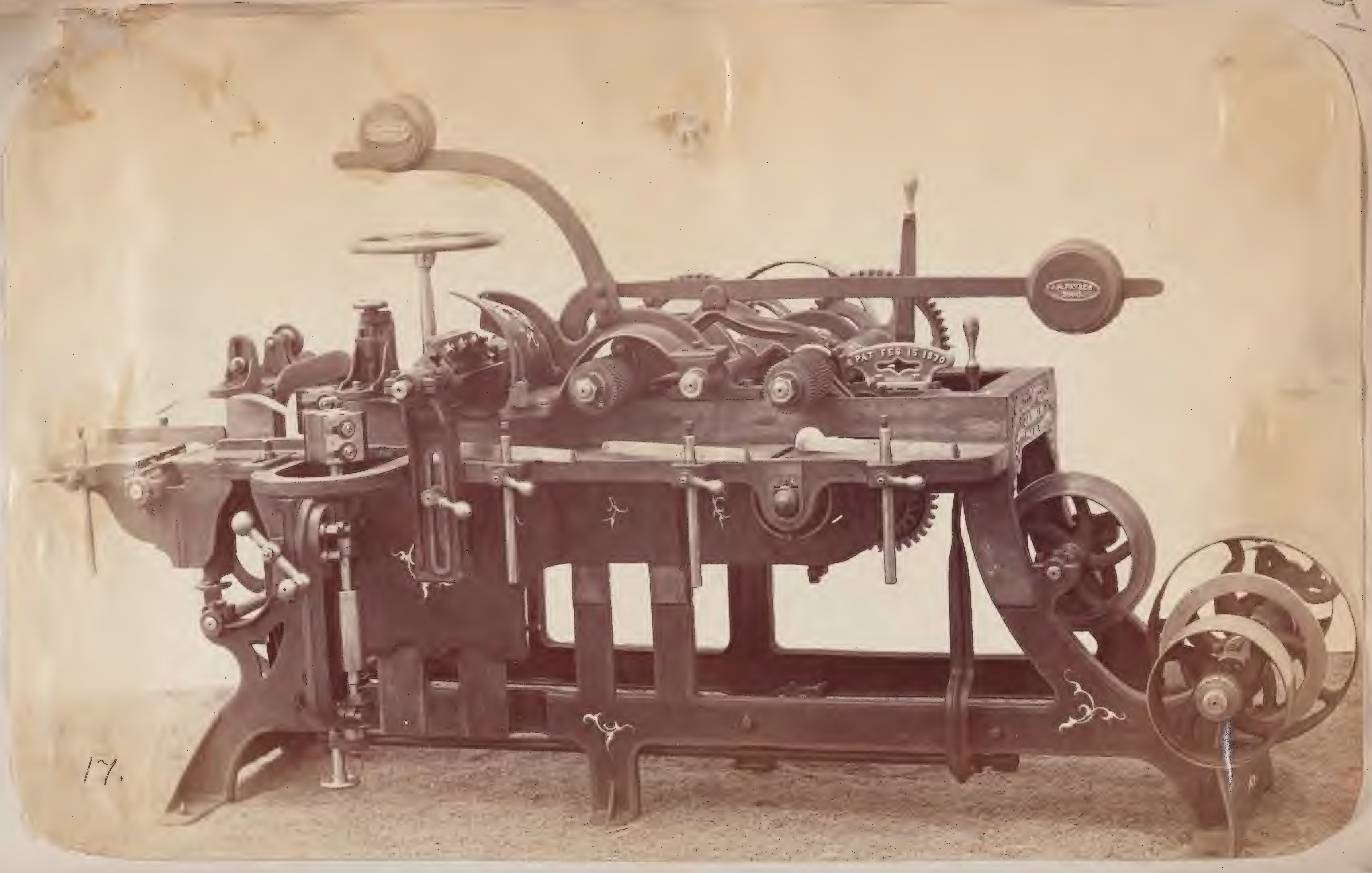




Smith and Garvin



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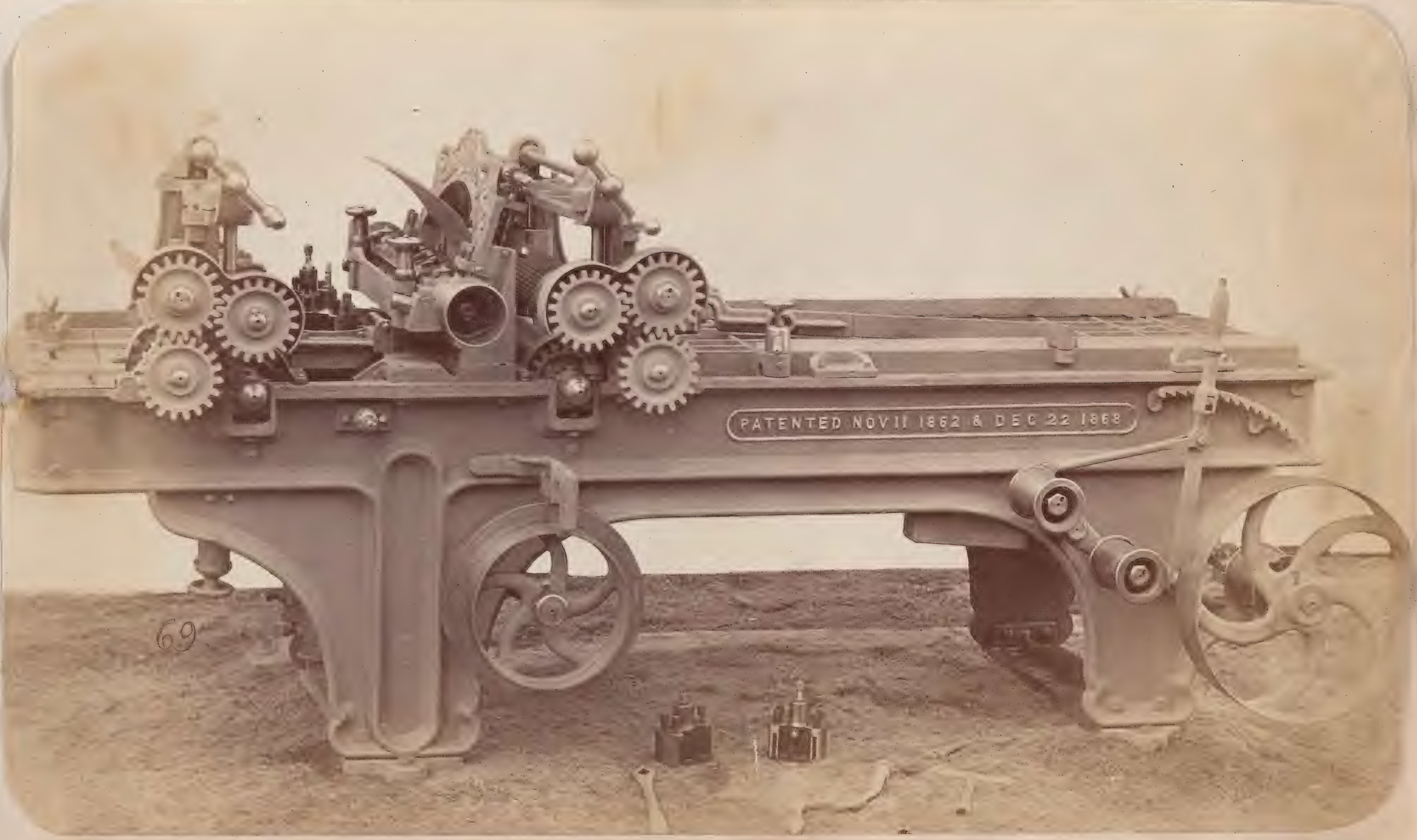
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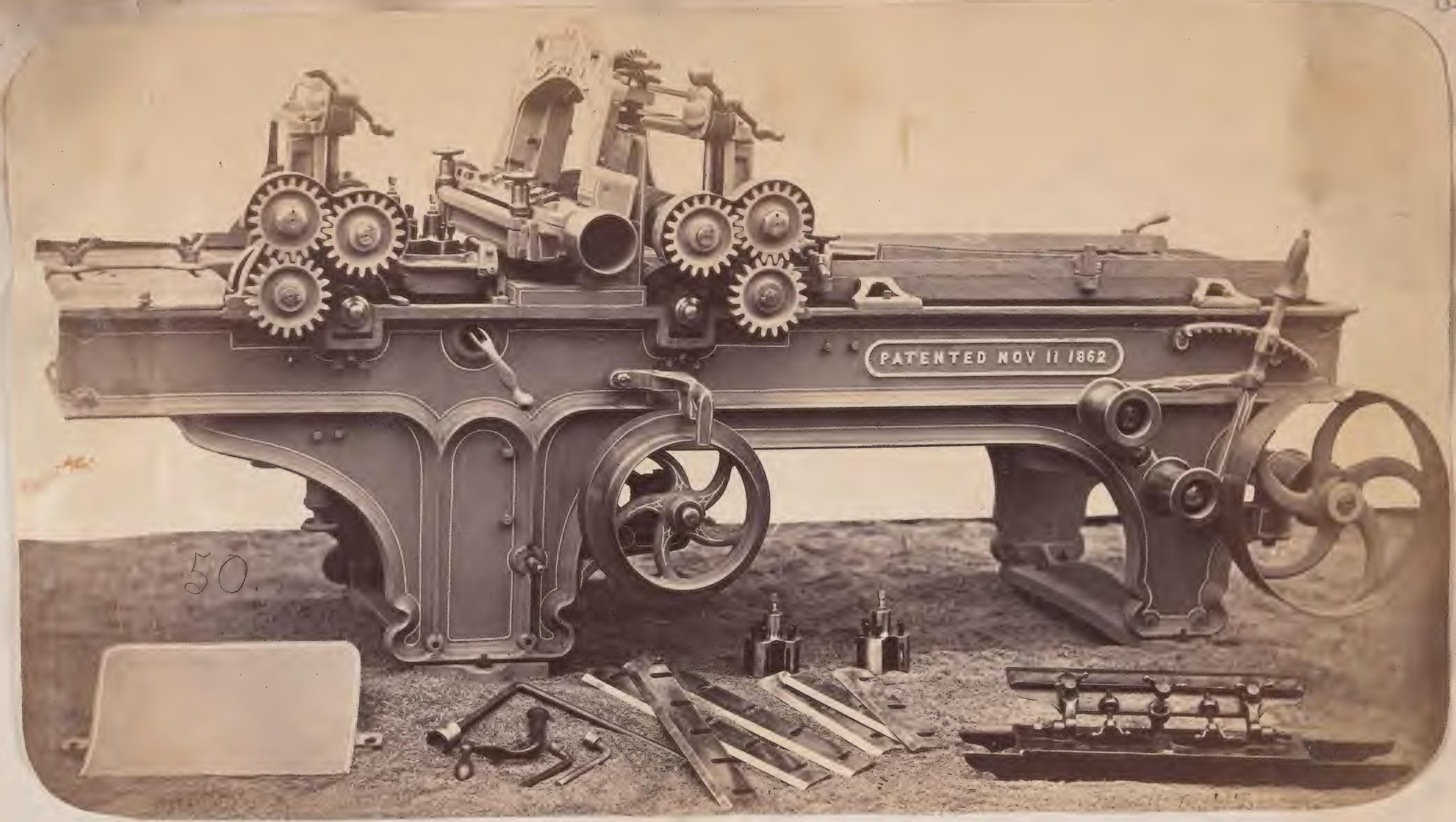

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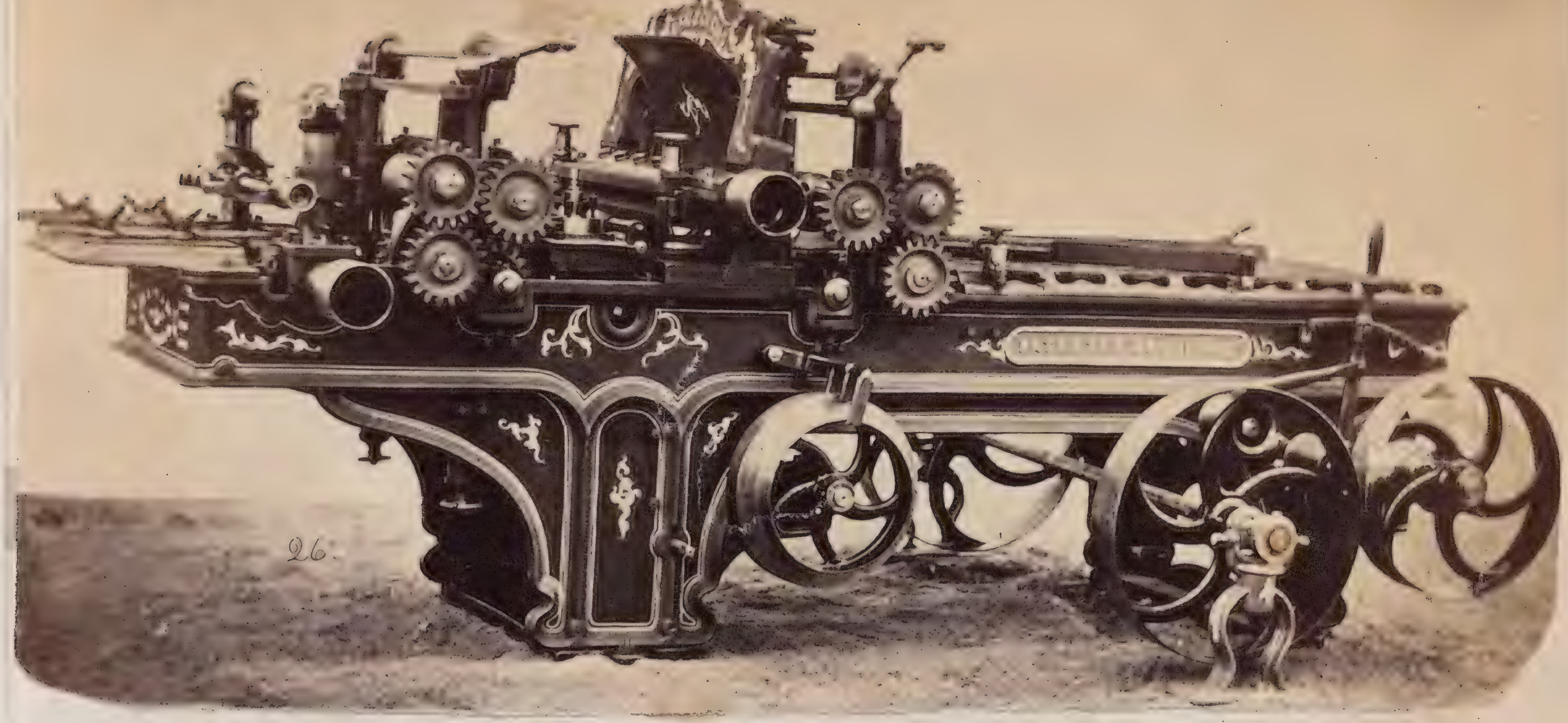

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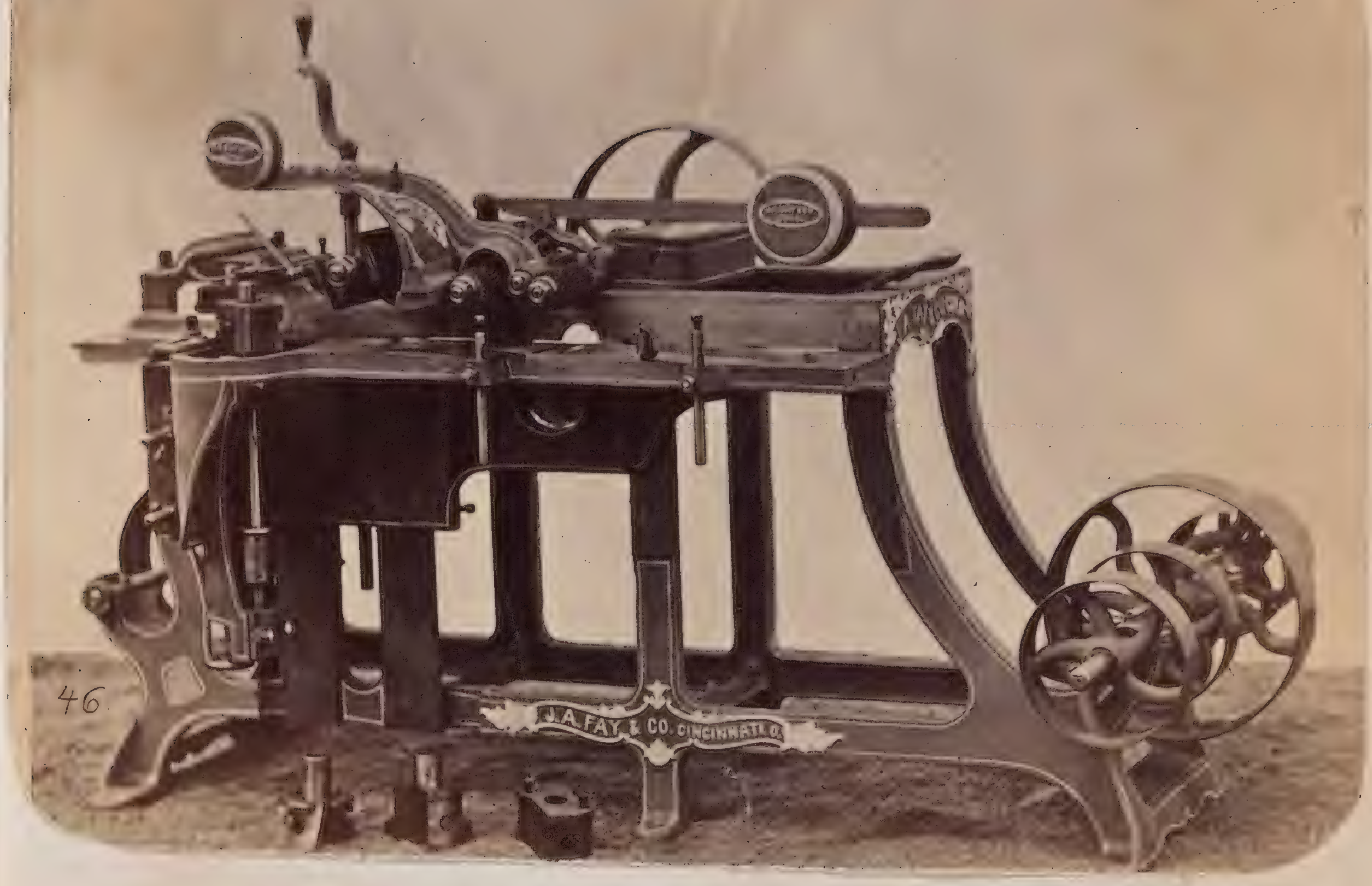

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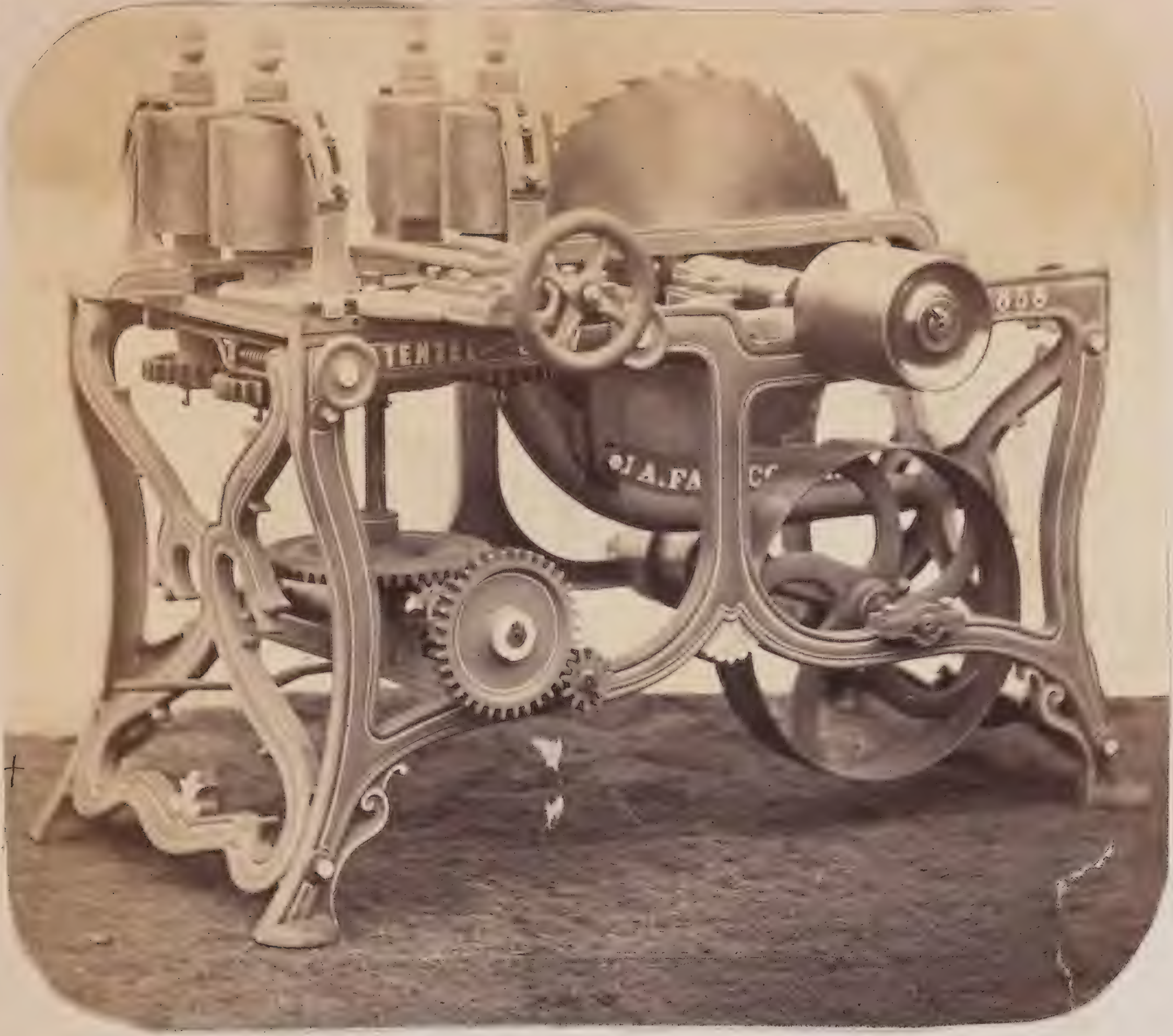

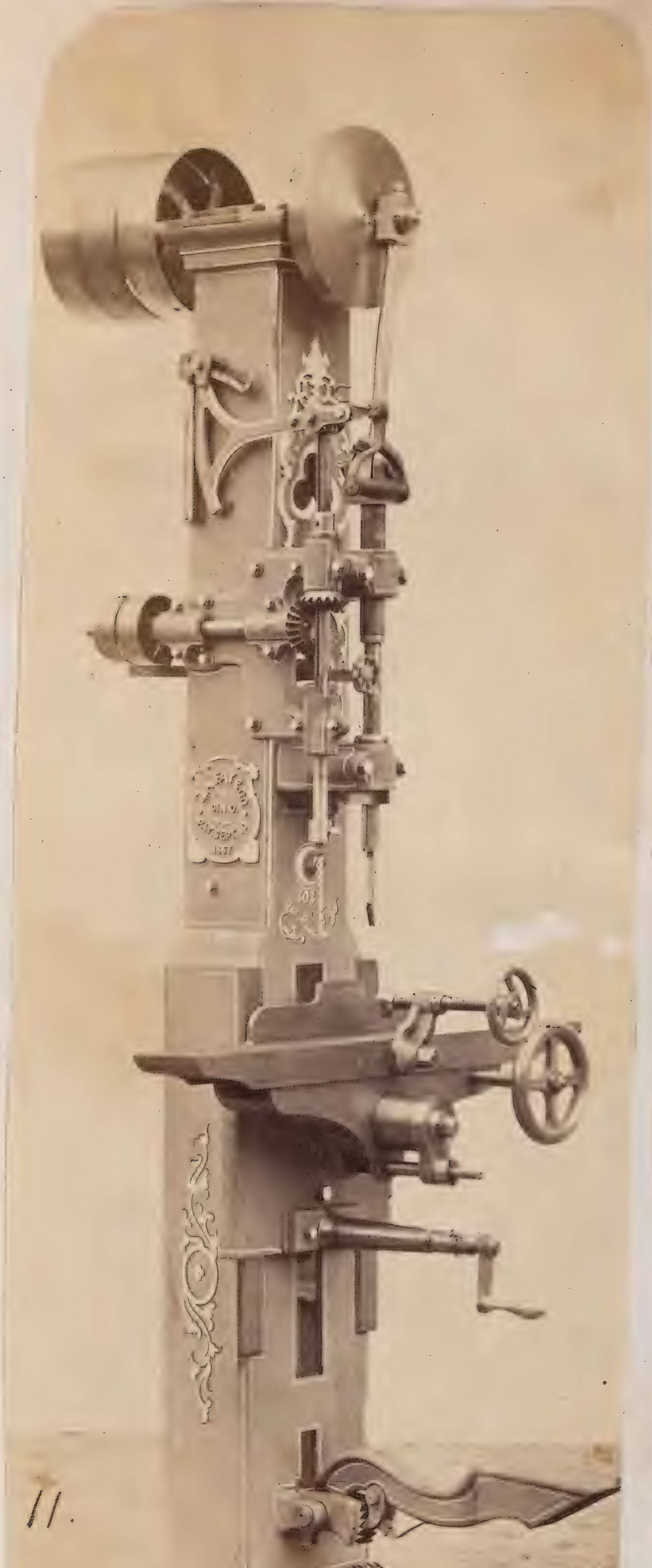

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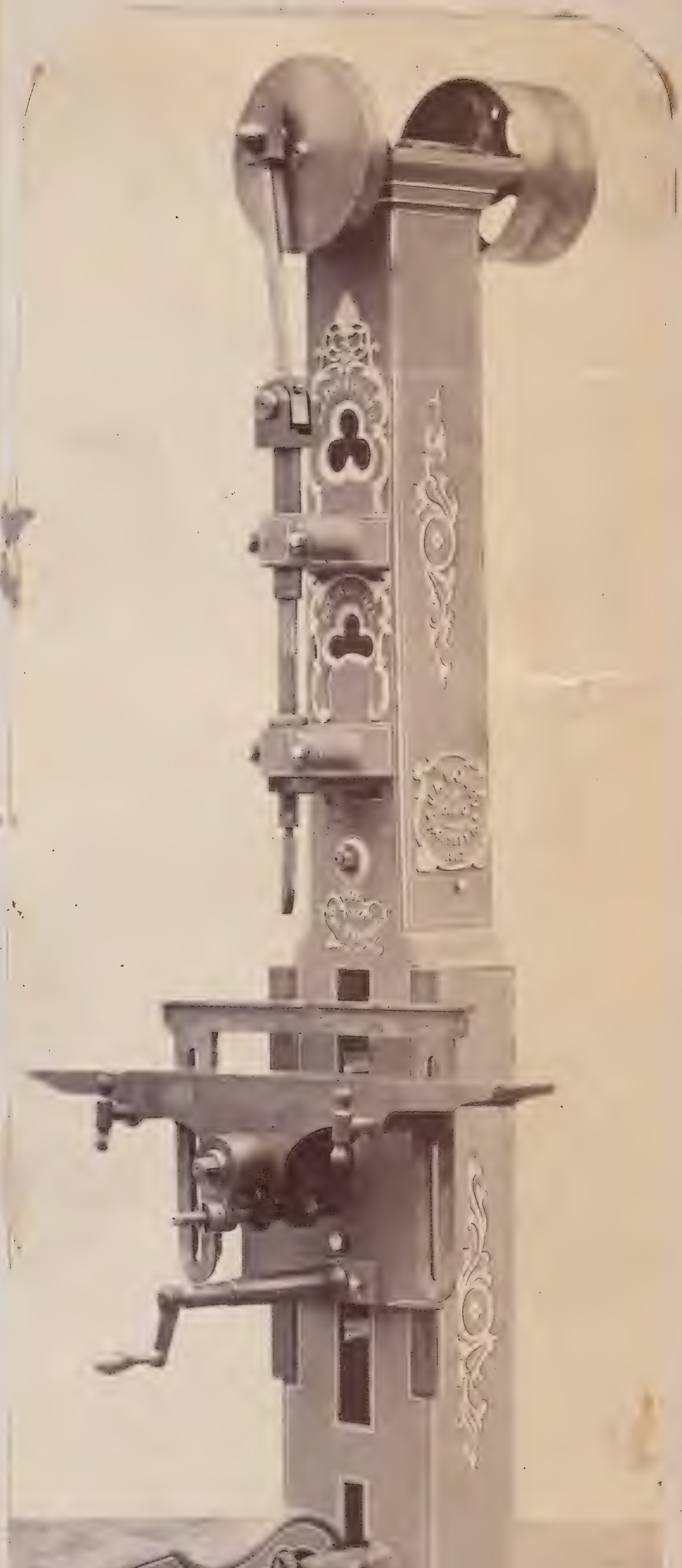

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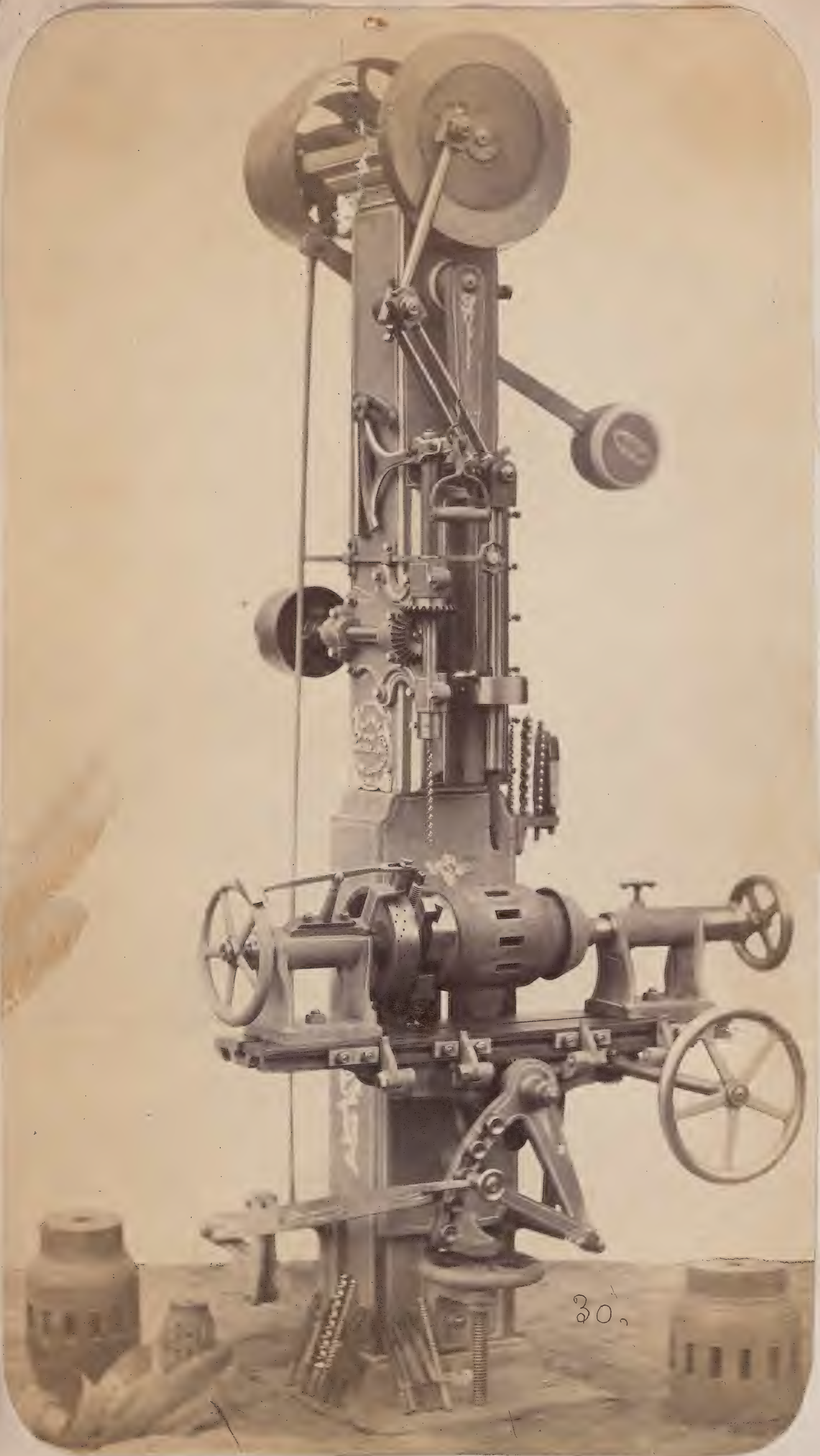
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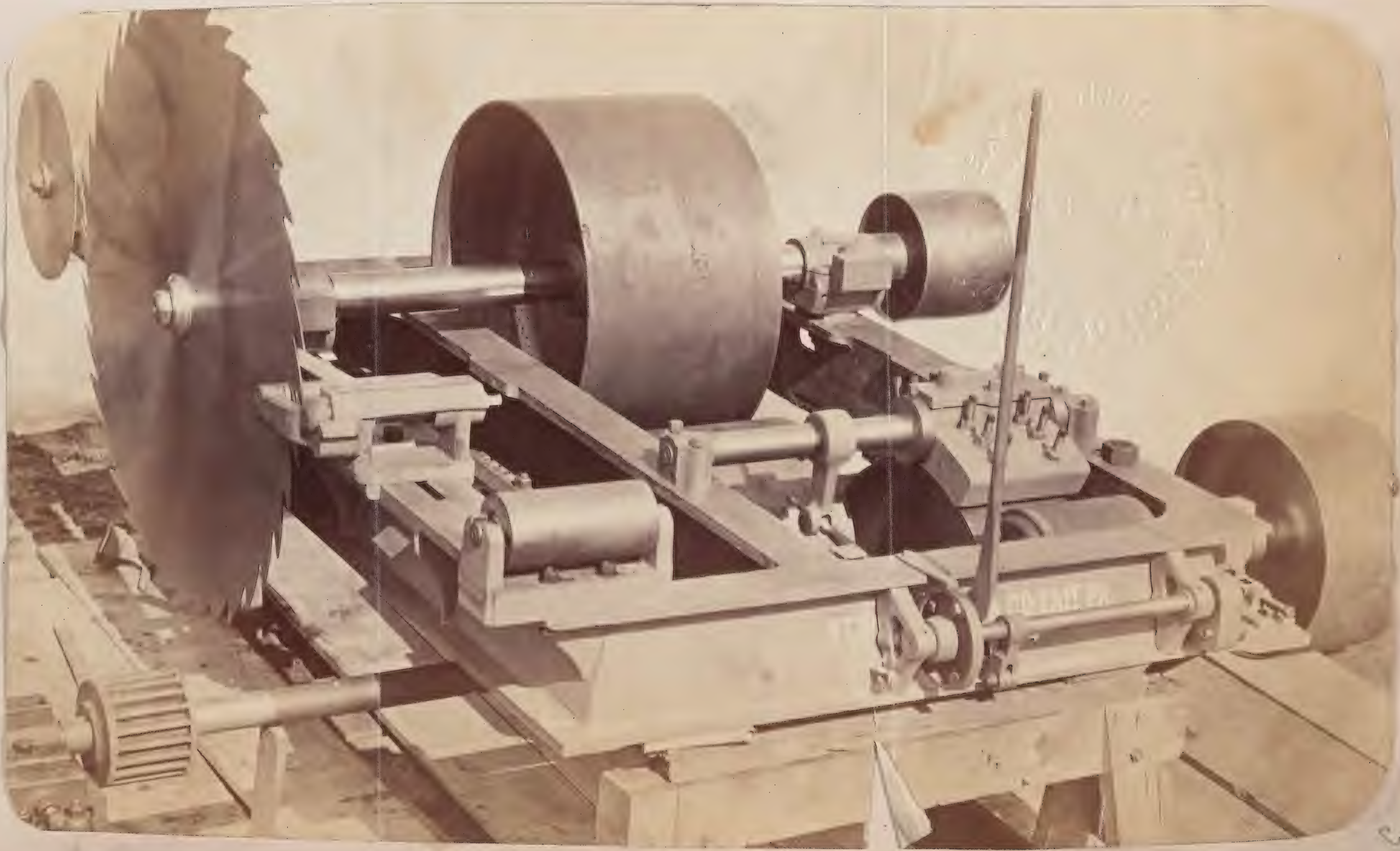
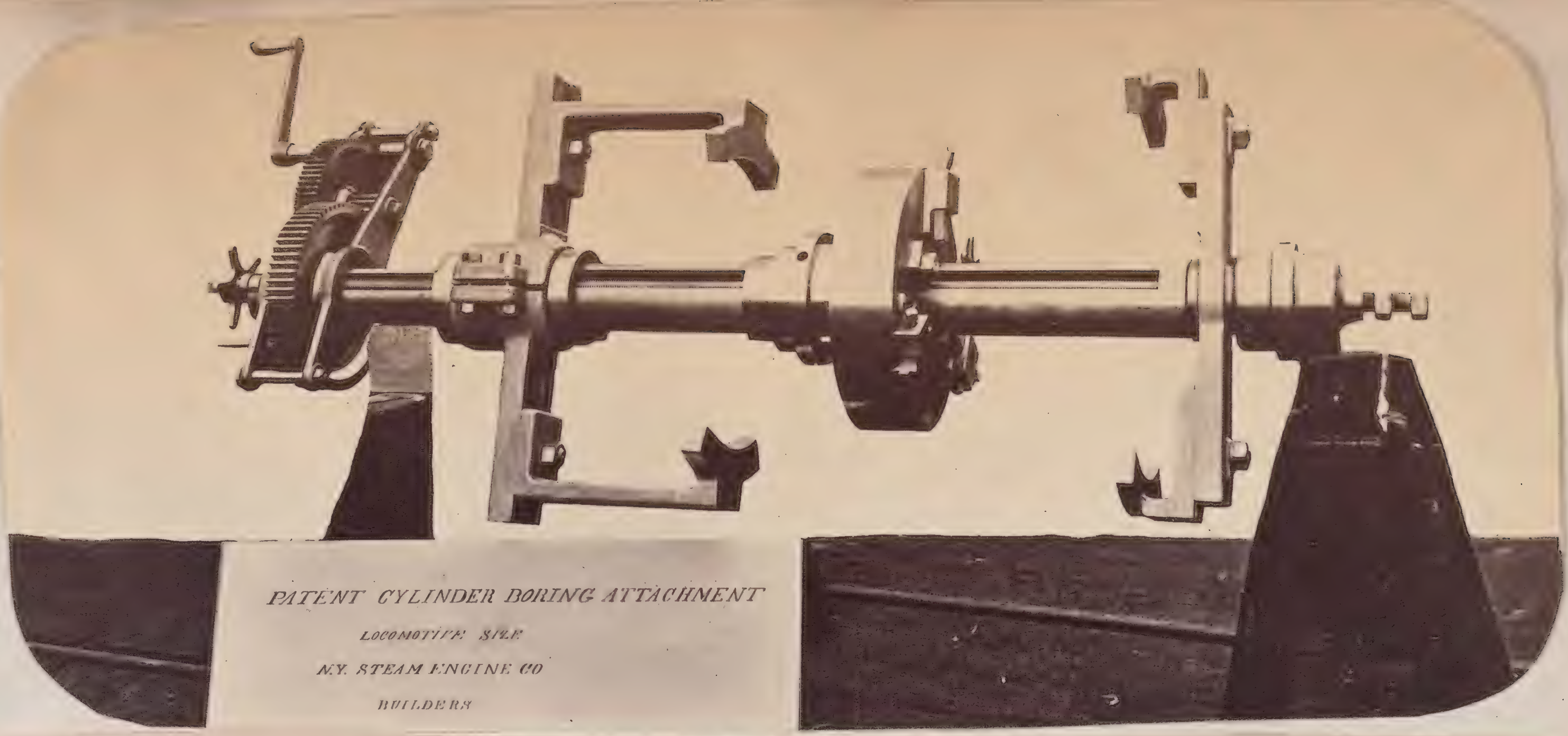


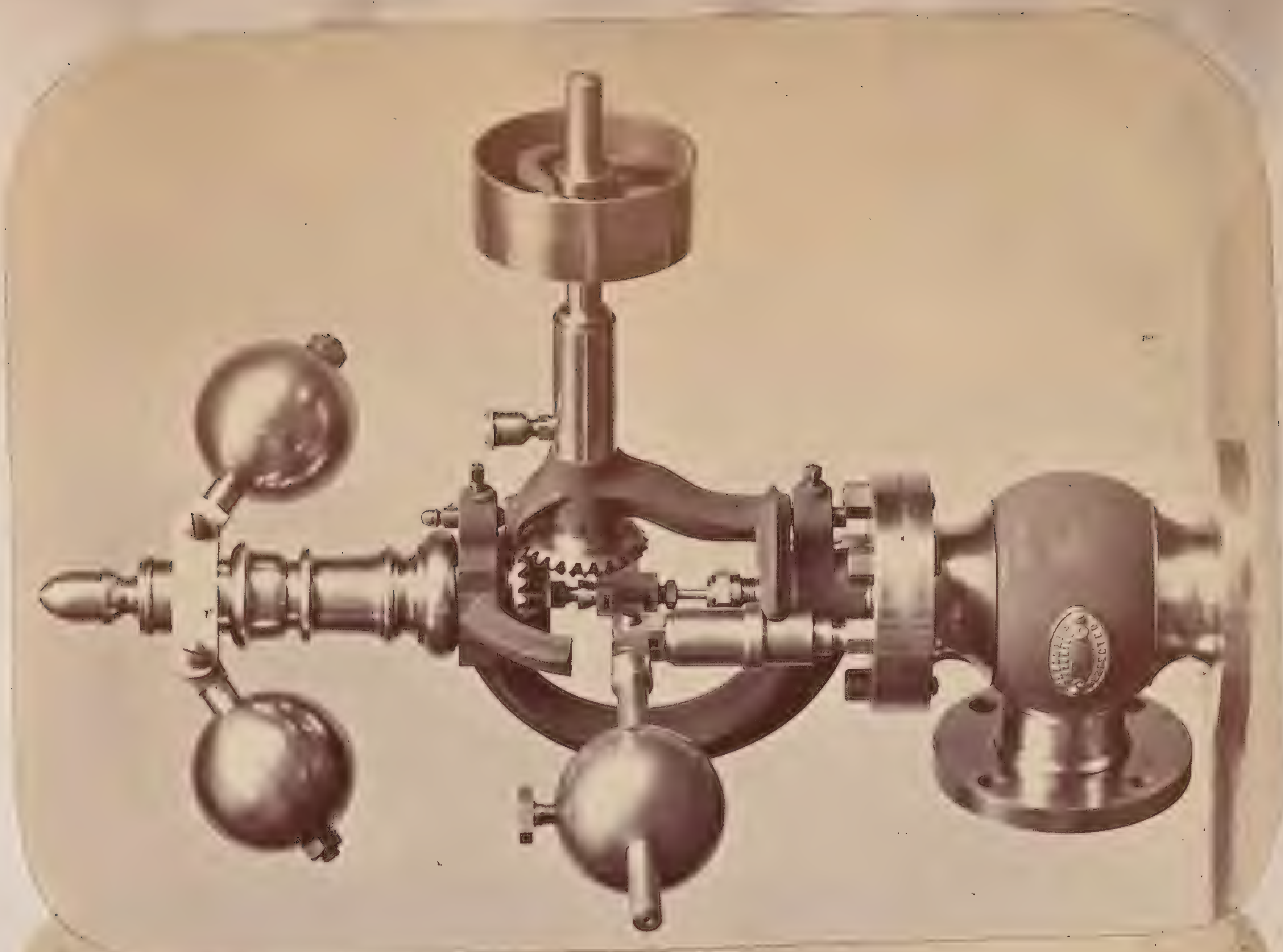


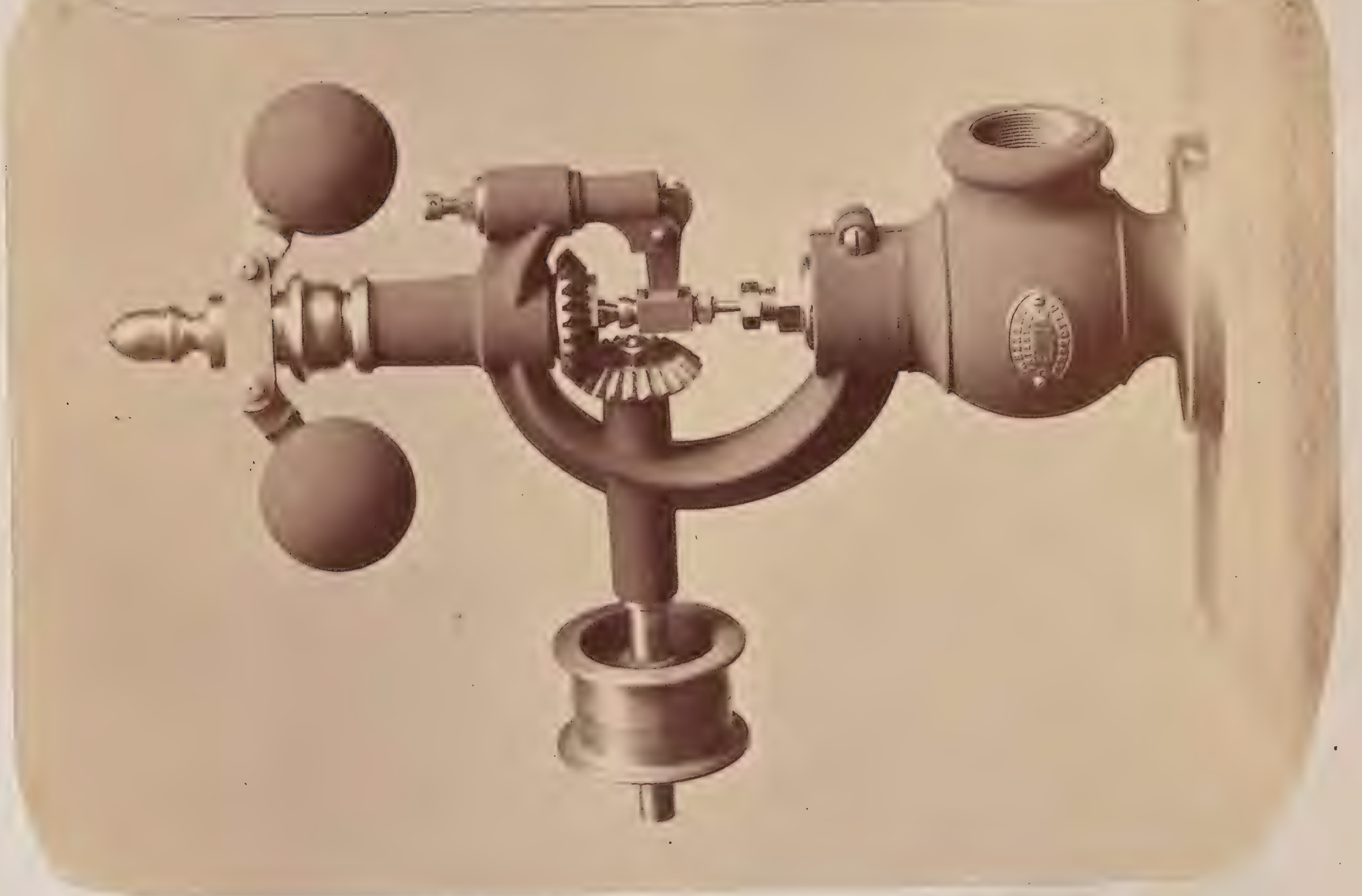
PATENT PORTABLE CYLINDER BORER.

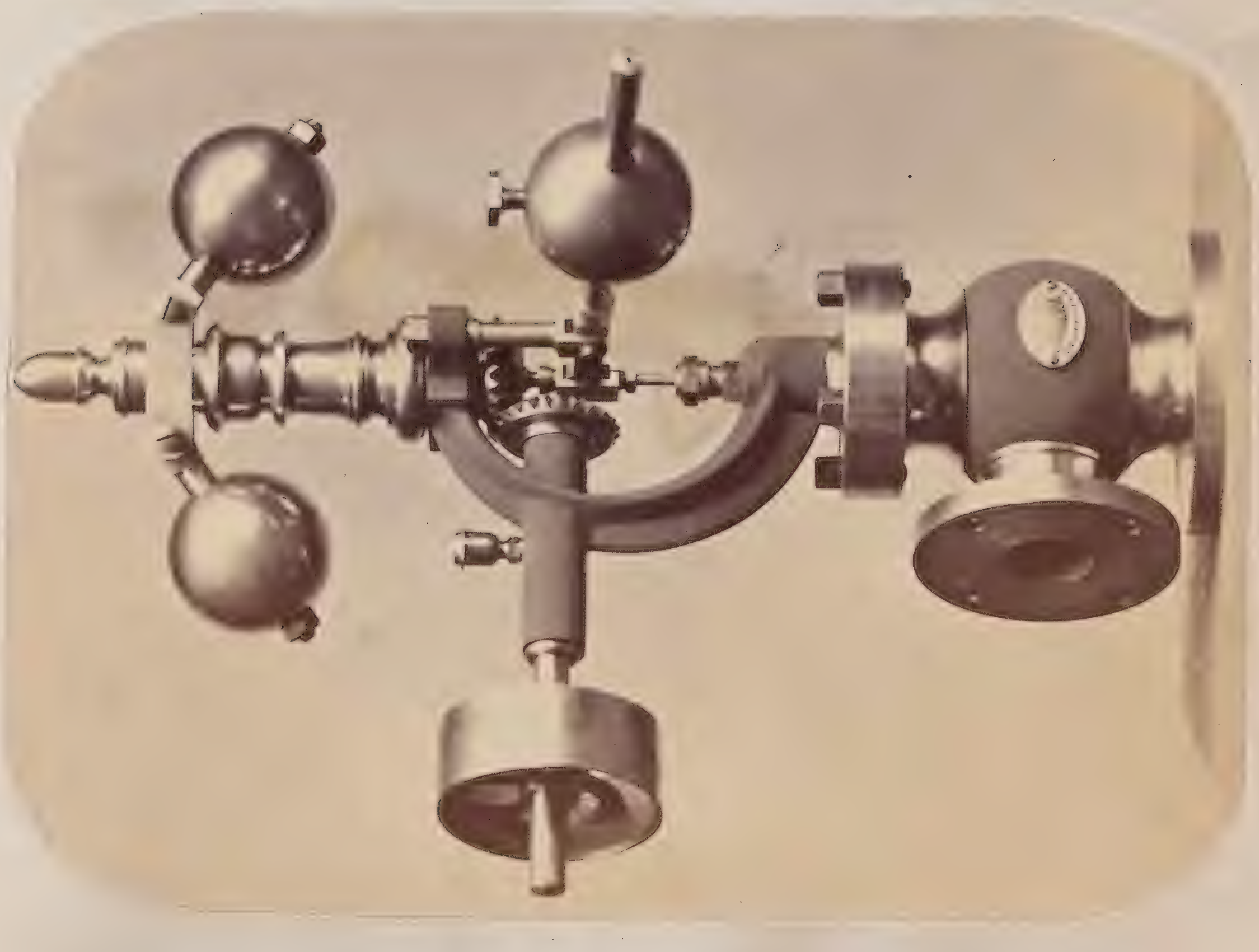
LOCOMOTIVE SIZE.

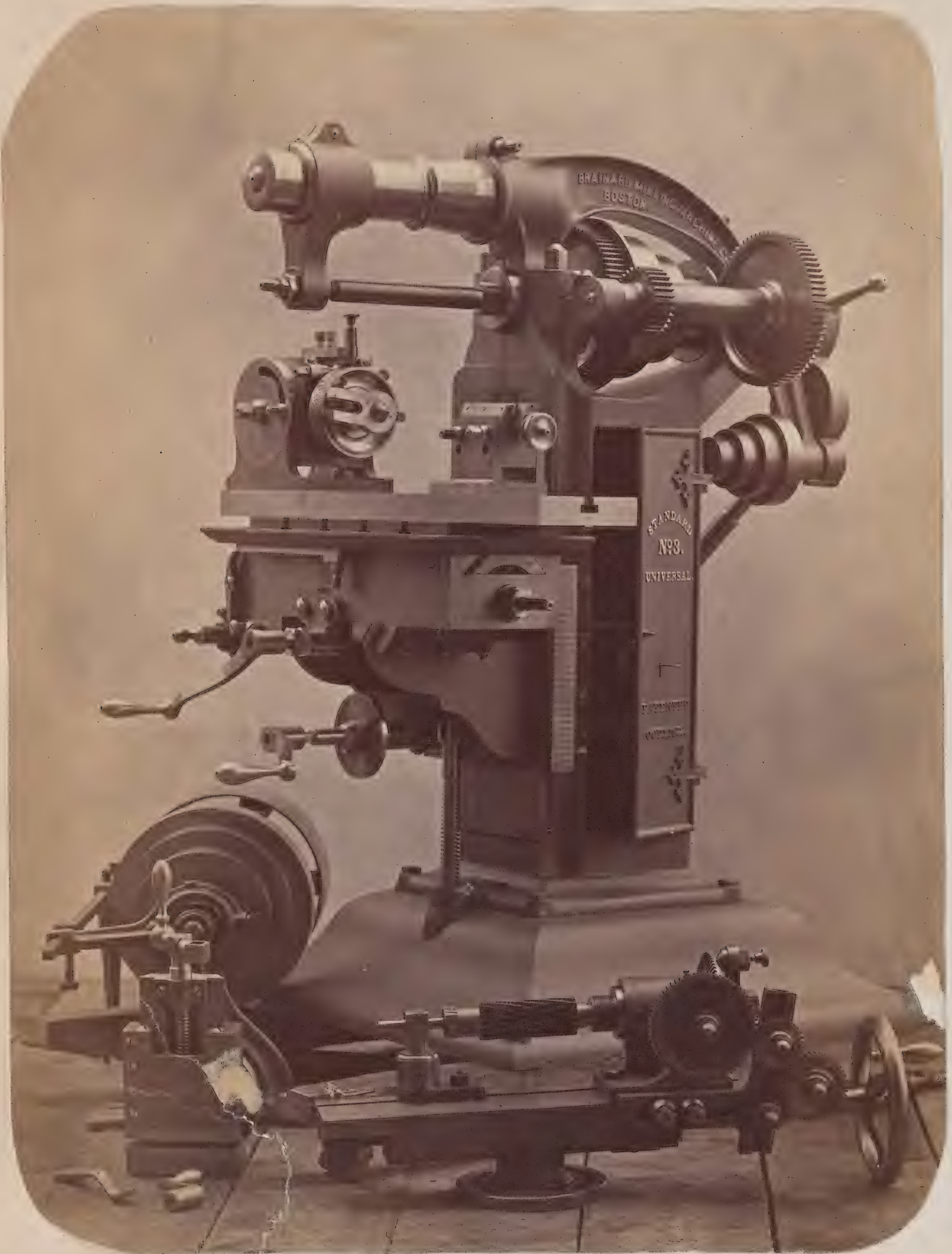
Portable Cylinder Boring Machine is so arranged that it can be attached to an engine standing on the track, and is driven or worked either by hand or POWER. The boring head slides upon a bar 4 inches in diameter, one end of which is placed in a bushing fastened in stuffing box, and the other end runs in a bearing bolted to cylinder flange. The boring head has three tool holders or poppets, and these will receive either boring, facing or turning cutters, and each or all of the cutters have an automatic and a hand feed; and as we will furnish a bearing for boring bar for each end of cylinder, if so required, it will be readily seen that with this machine you can bore a cylinder, face the flanges, and turn the flanges on their edges. These machines will bore a cylinder as small as 15 inches diameter, and as large as 20 inches diameter, with an extreme traverse of head of 32 inches (this is speaking of the locomotive size). We also make them any size and length required for stationary and marine cylinders. Steel wrenches, wrought iron work case-hardened. Is provided with patent hollow self-oiling countershaft, that will run, after once being oiled, 12 months, and is in every respect complete.

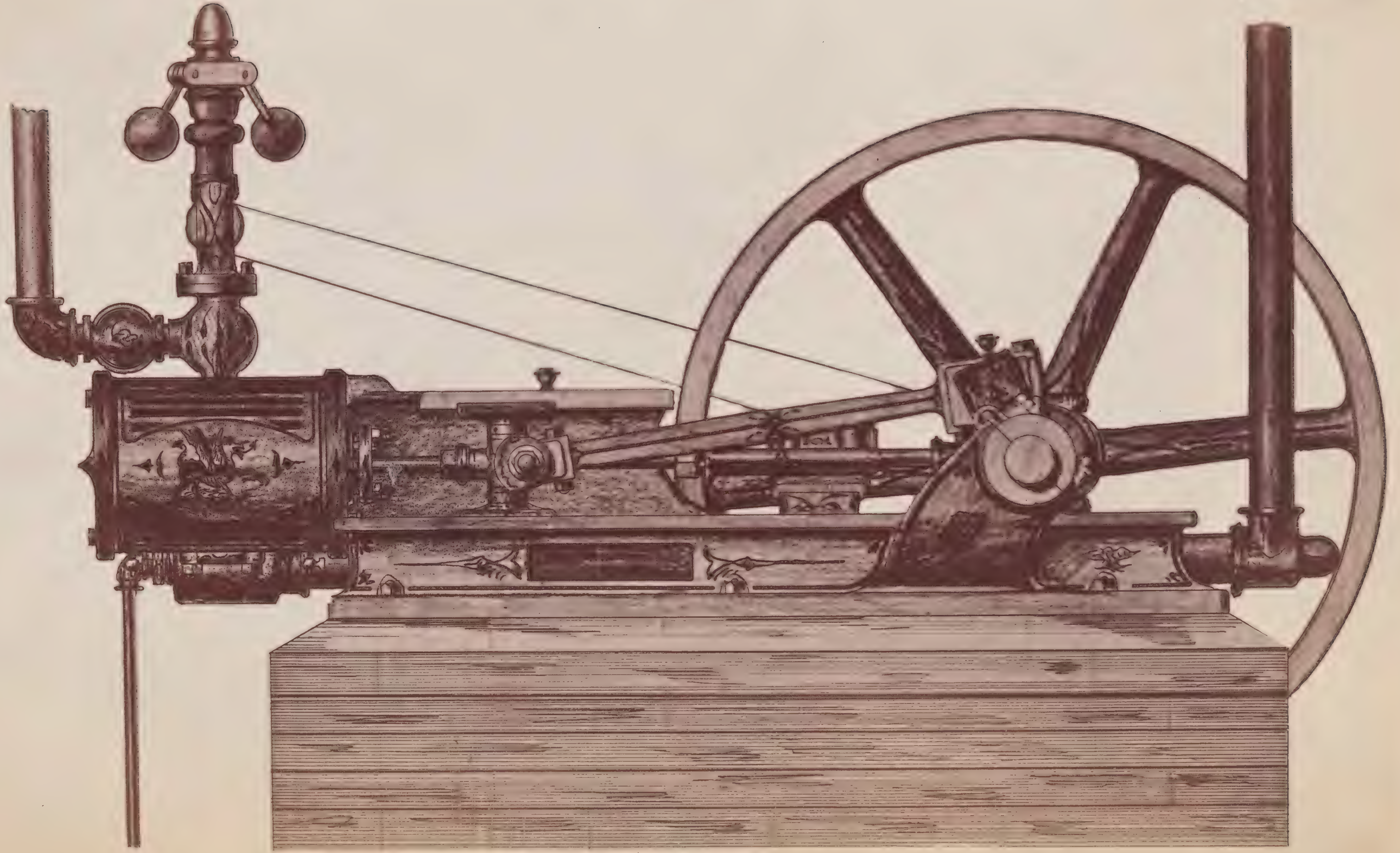
Weight ***lbs.*** ***Price, $***








BRAINARD MILLING MACHINE Co.
BOSTON
STANDARD
No. 3.
UNIVERSAL.
PATENTED



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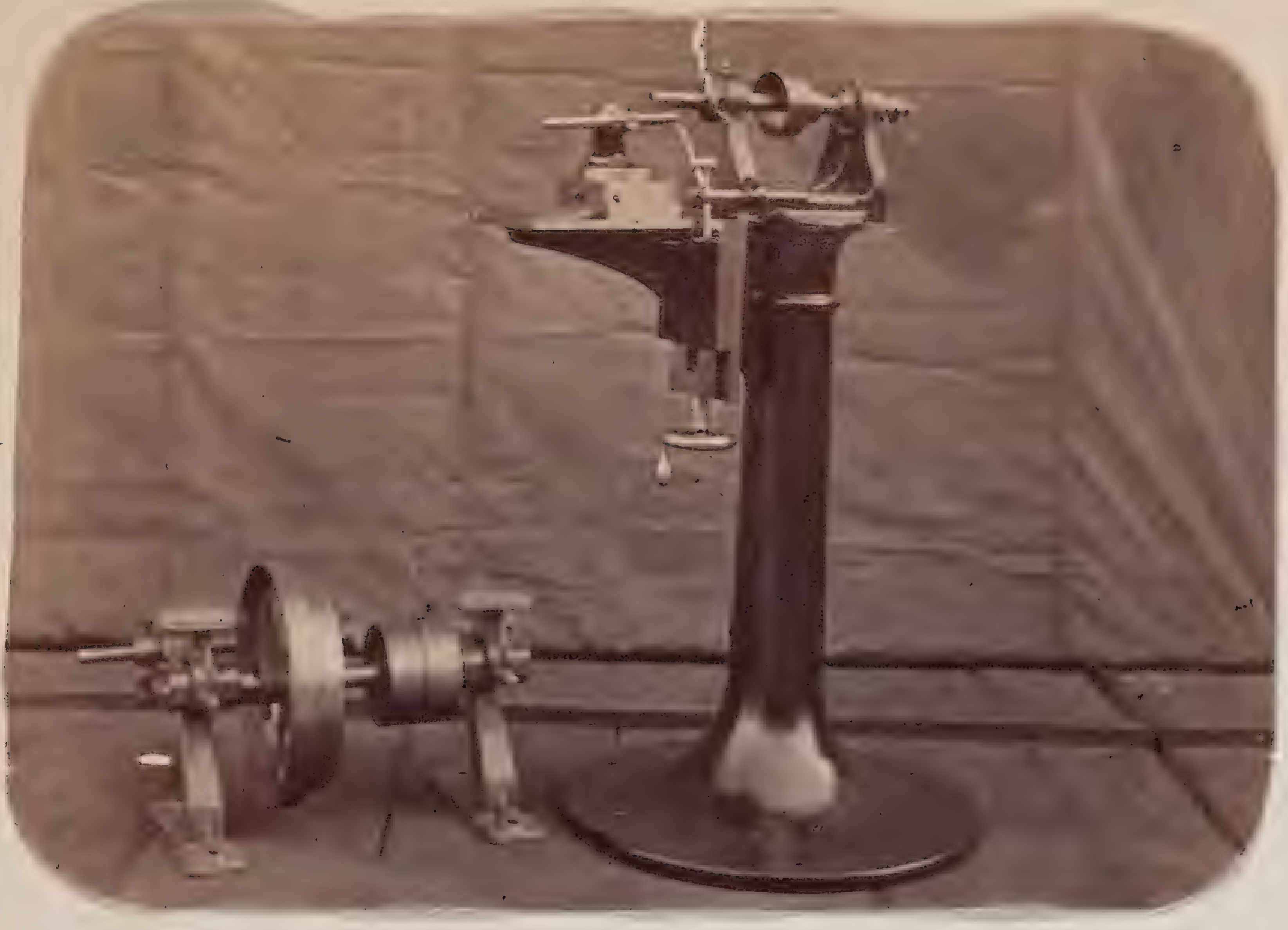
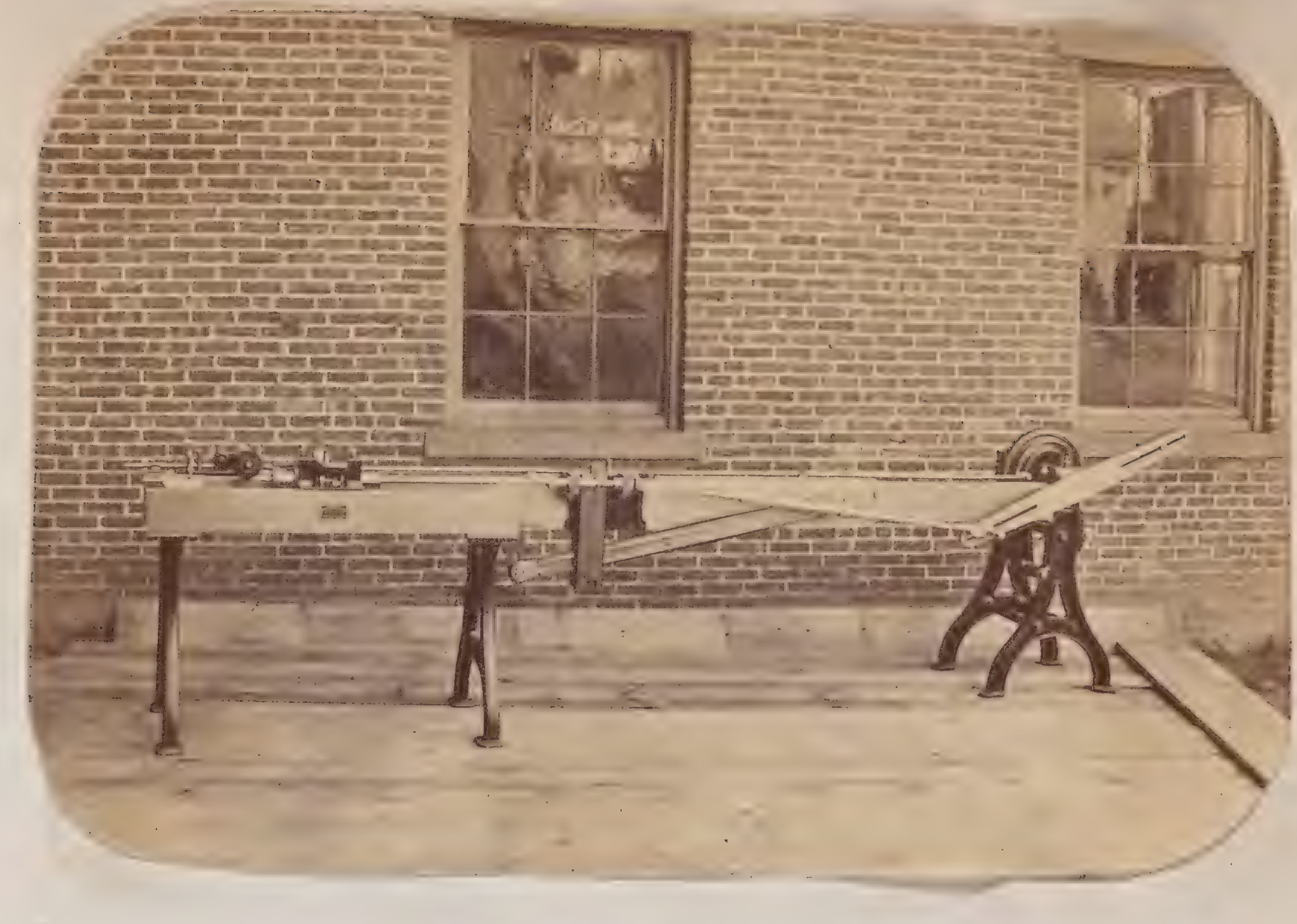


Pratt & Whitney

Cutter Grinding Machine.

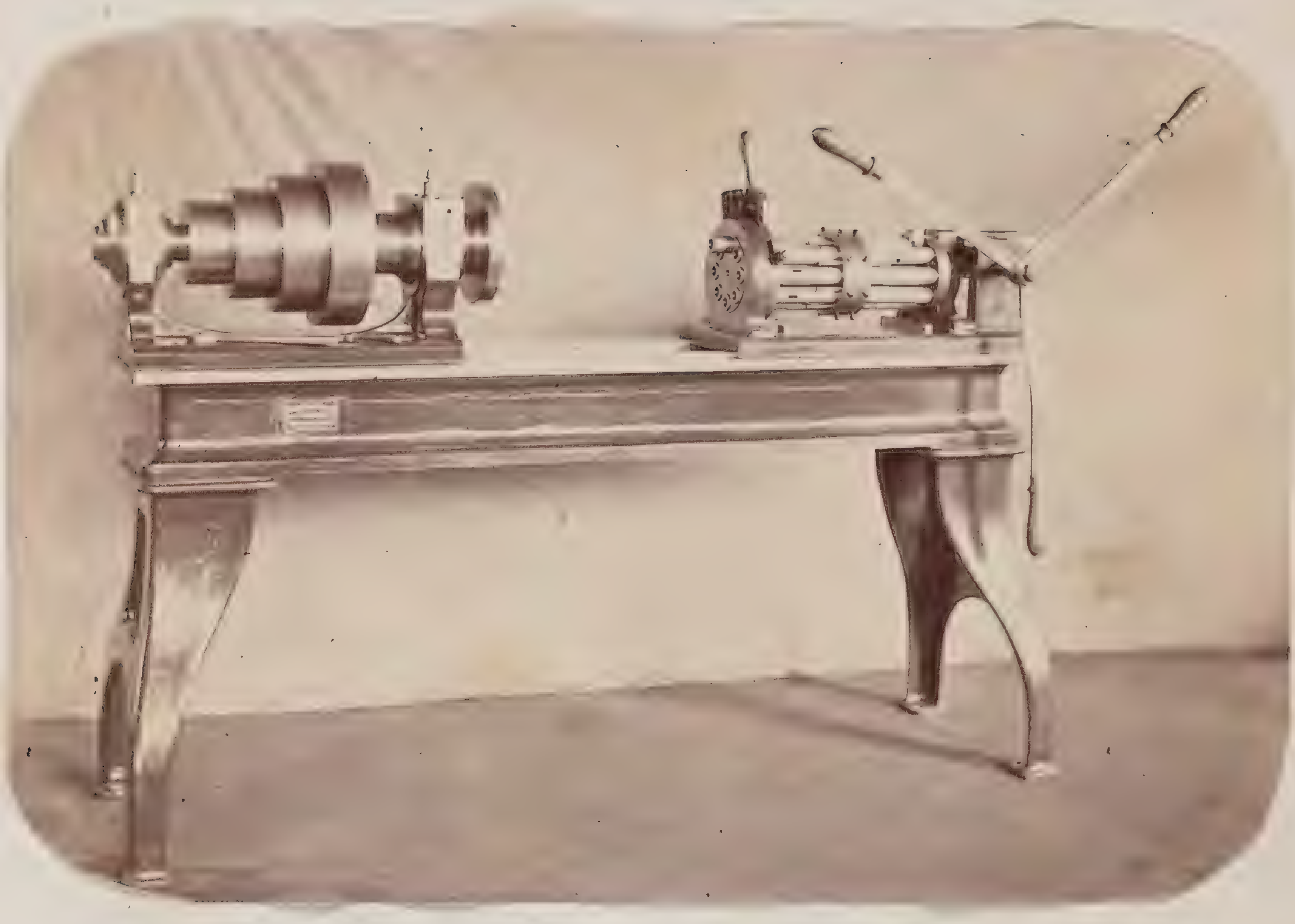
This machine is adapted for grinding all kinds and sizes of mills or cutters, straight, taper, spiral, spiral taper, &c. The pointer is so arranged that any desired position can be easily attained, and is intended to rest upon the tooth to be ground and thus avoid the necessity, otherwise imperative, of making the teeth of the cutters uniform. The workmanship is of the best character.

Weight, with countershaft, 425 lbs.
Price, do. do. $
Speed of countershaft, revolutions per minute.



rifling machine

Pratt & Whitney Co



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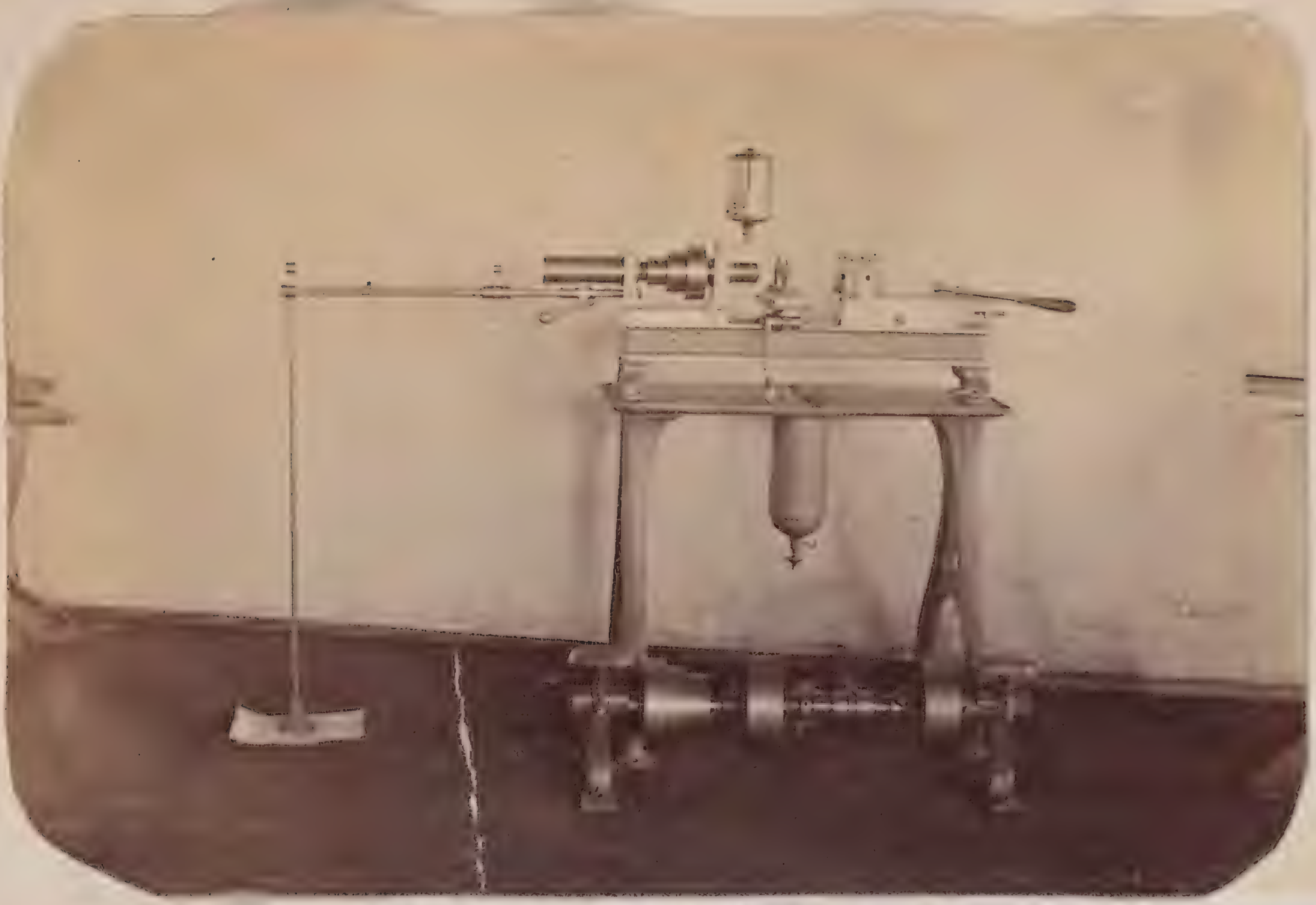
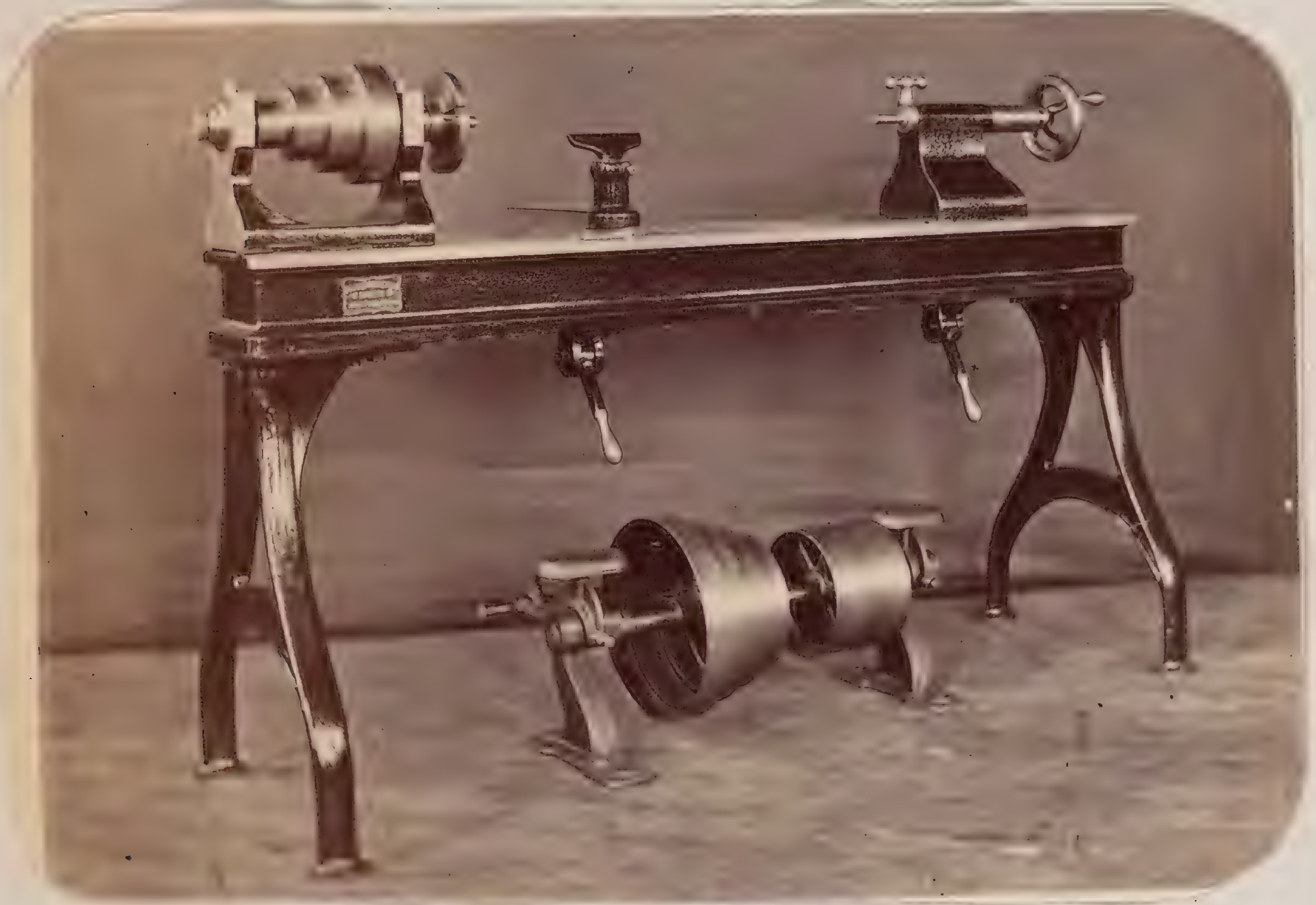
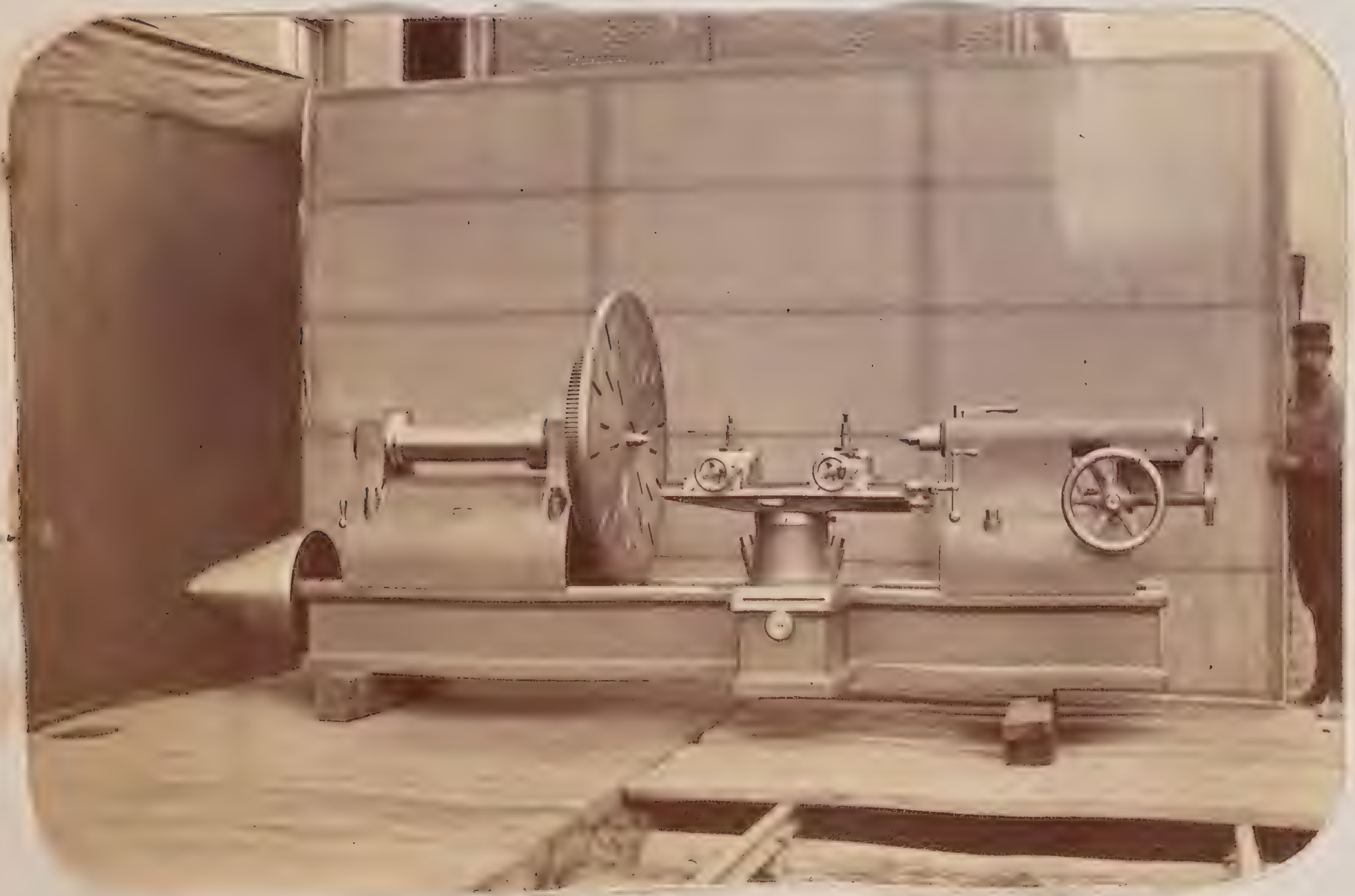
Pratt & Whitney Co.



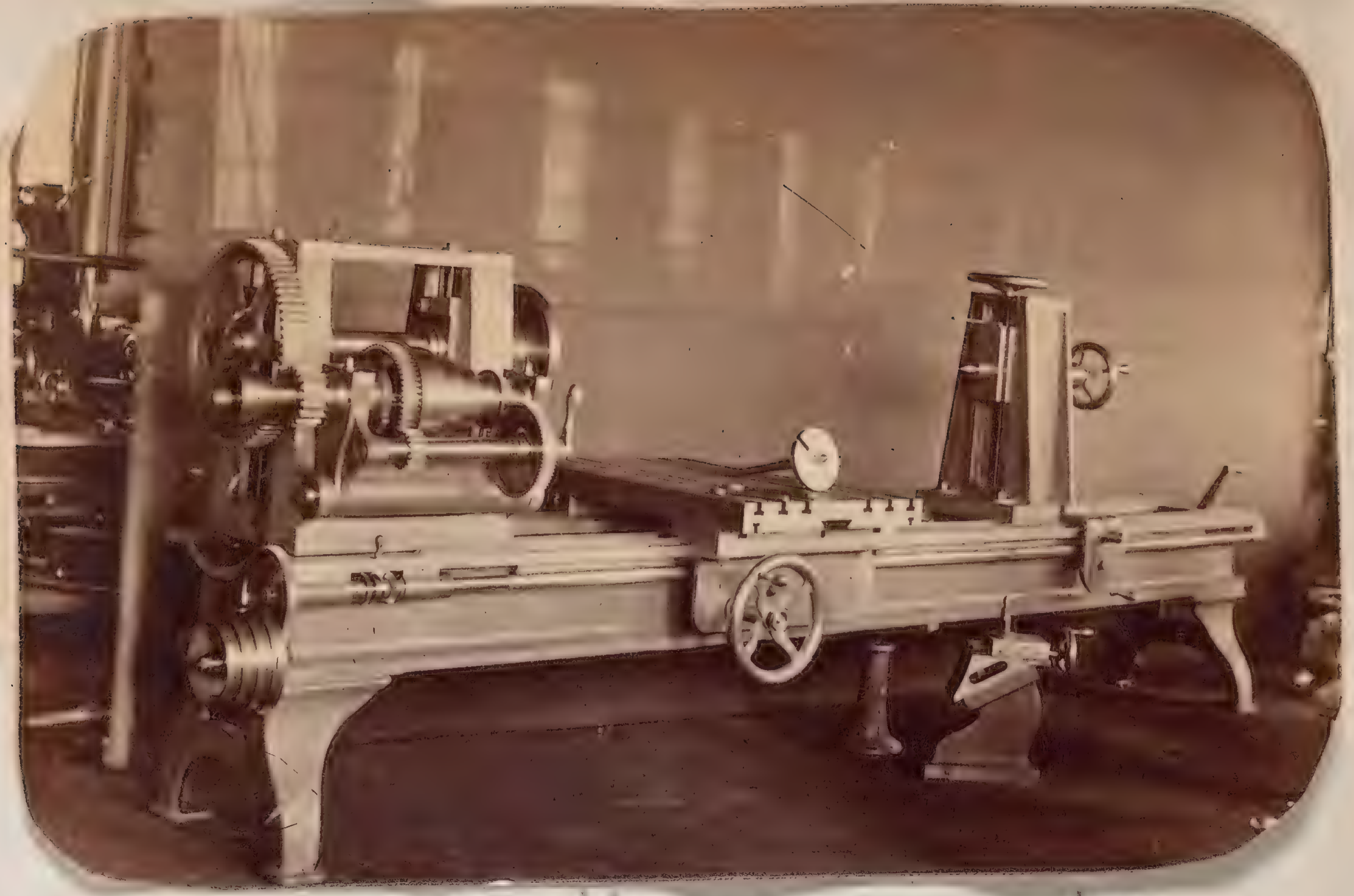
screw machine



15 15" hand lathe

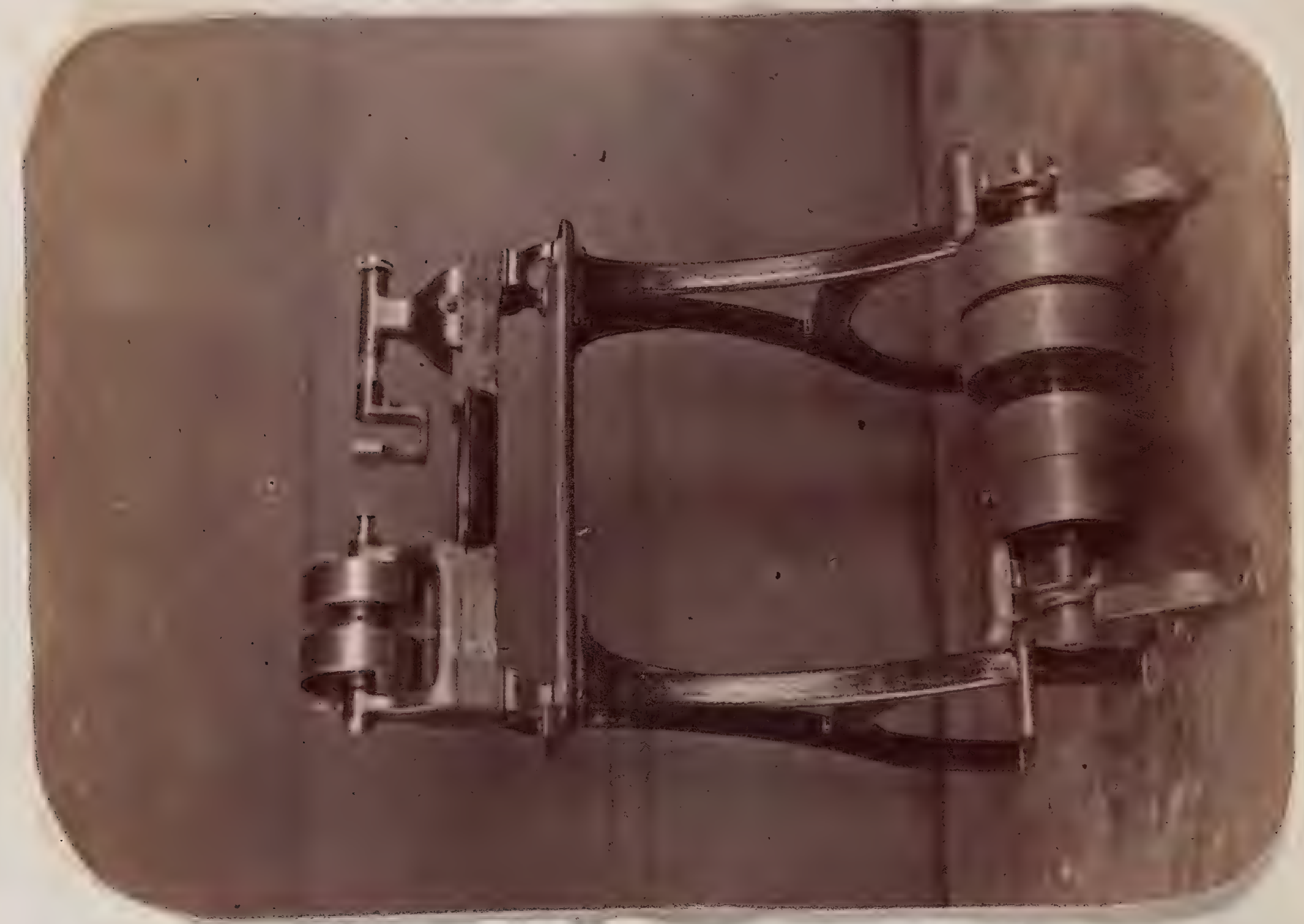


Pulley lathe

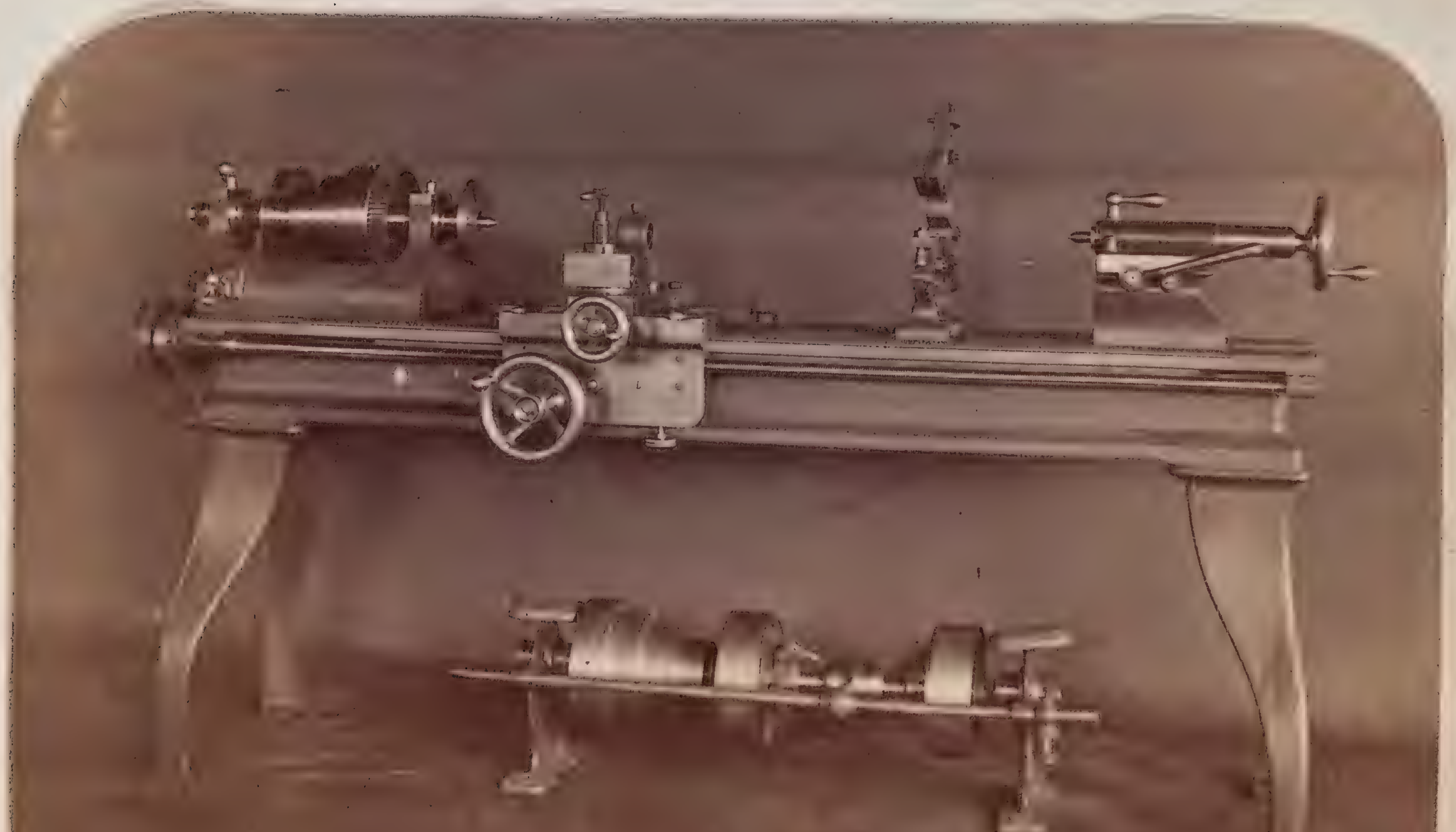


42

42" Lathe boring Mill

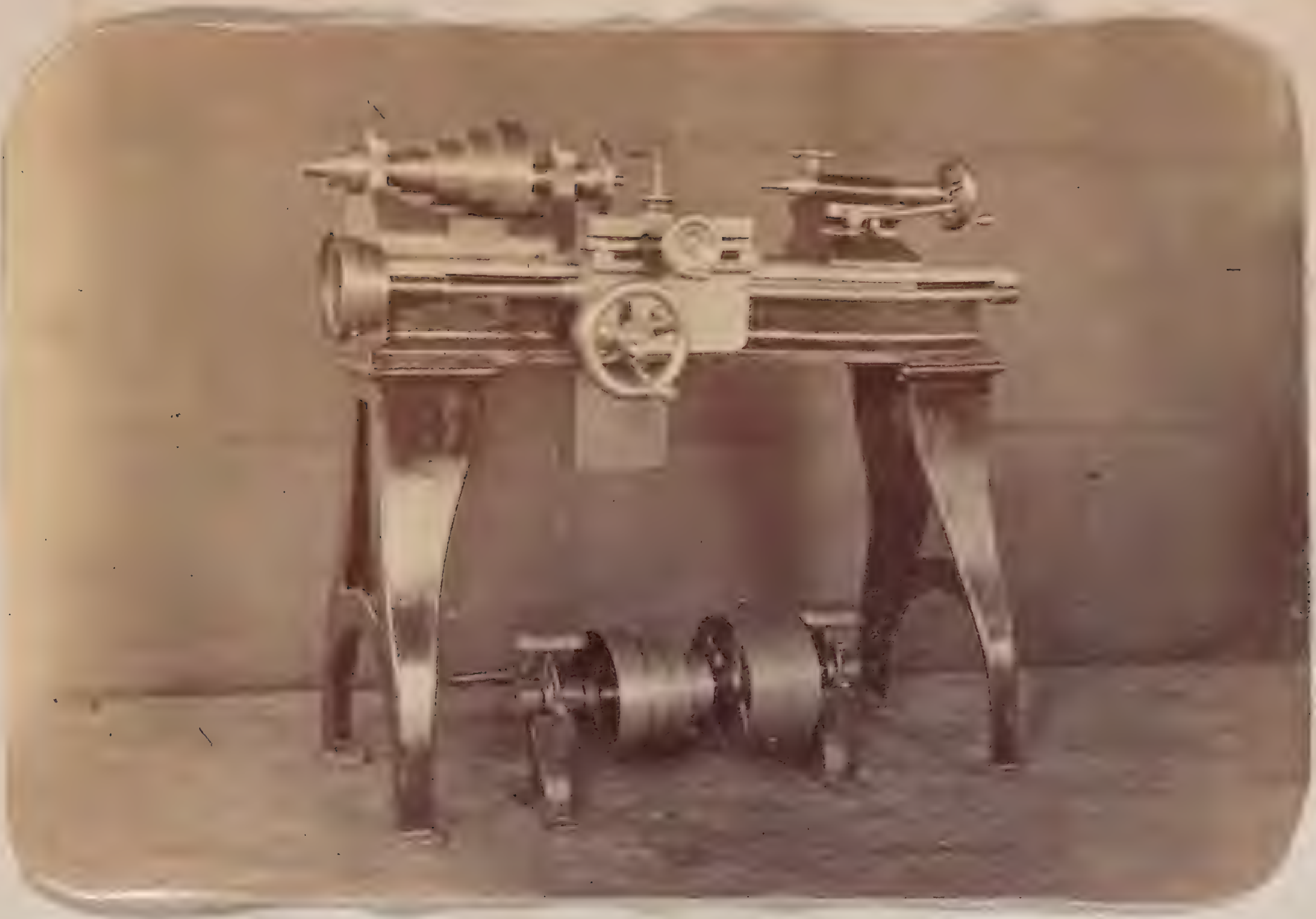


tapping machine



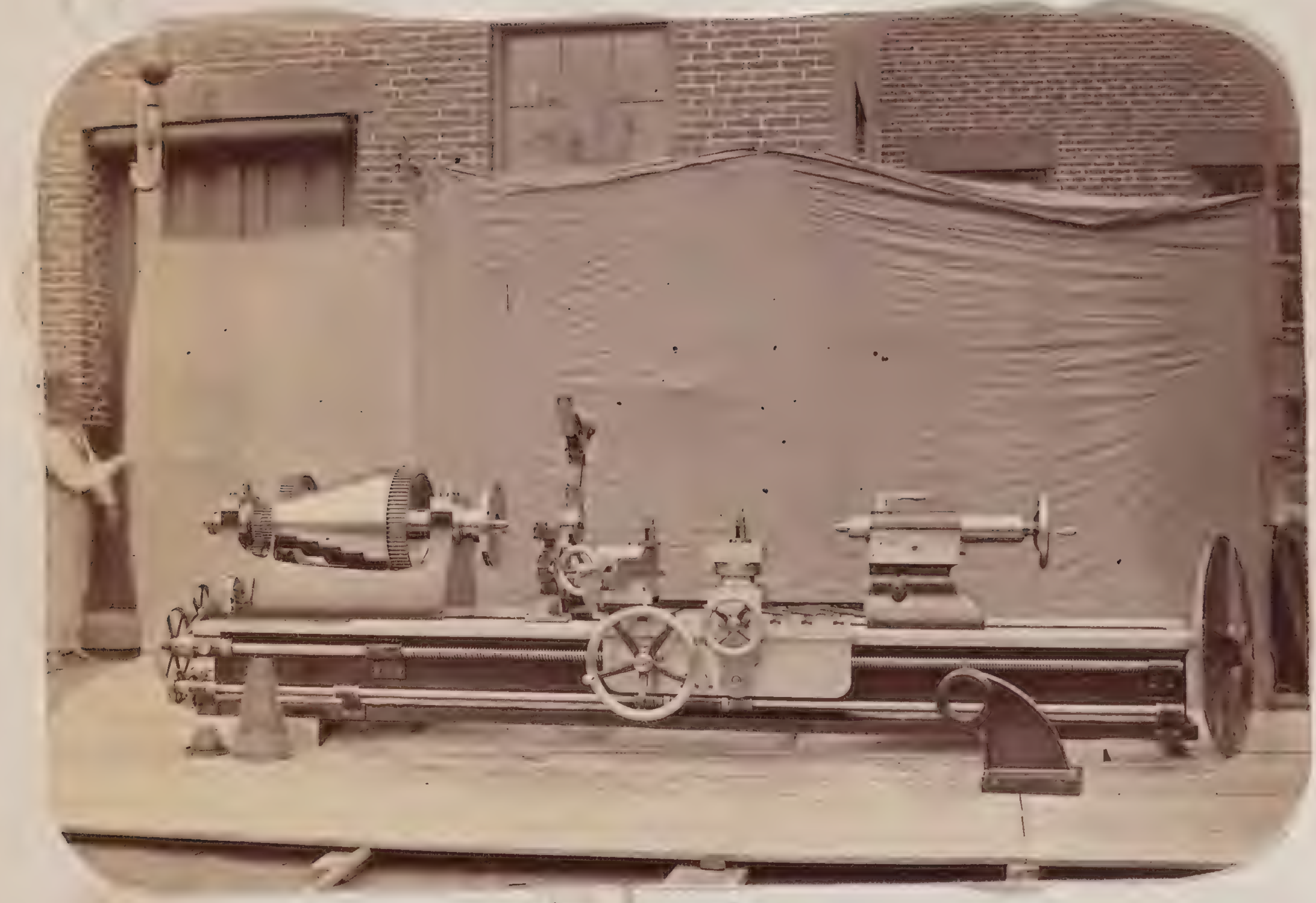
15"

15" Lathe



13" lathe

13



37" lathe

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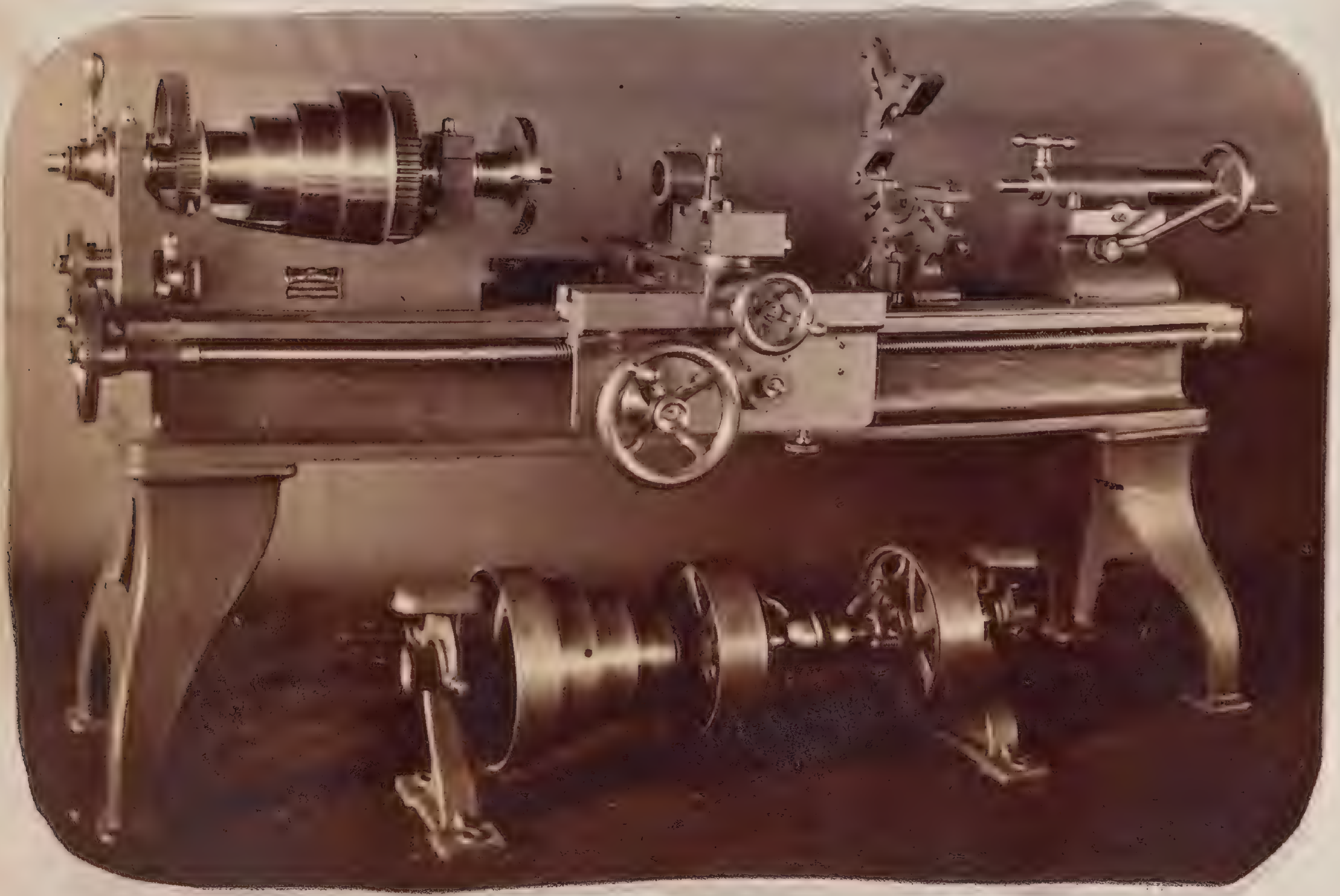
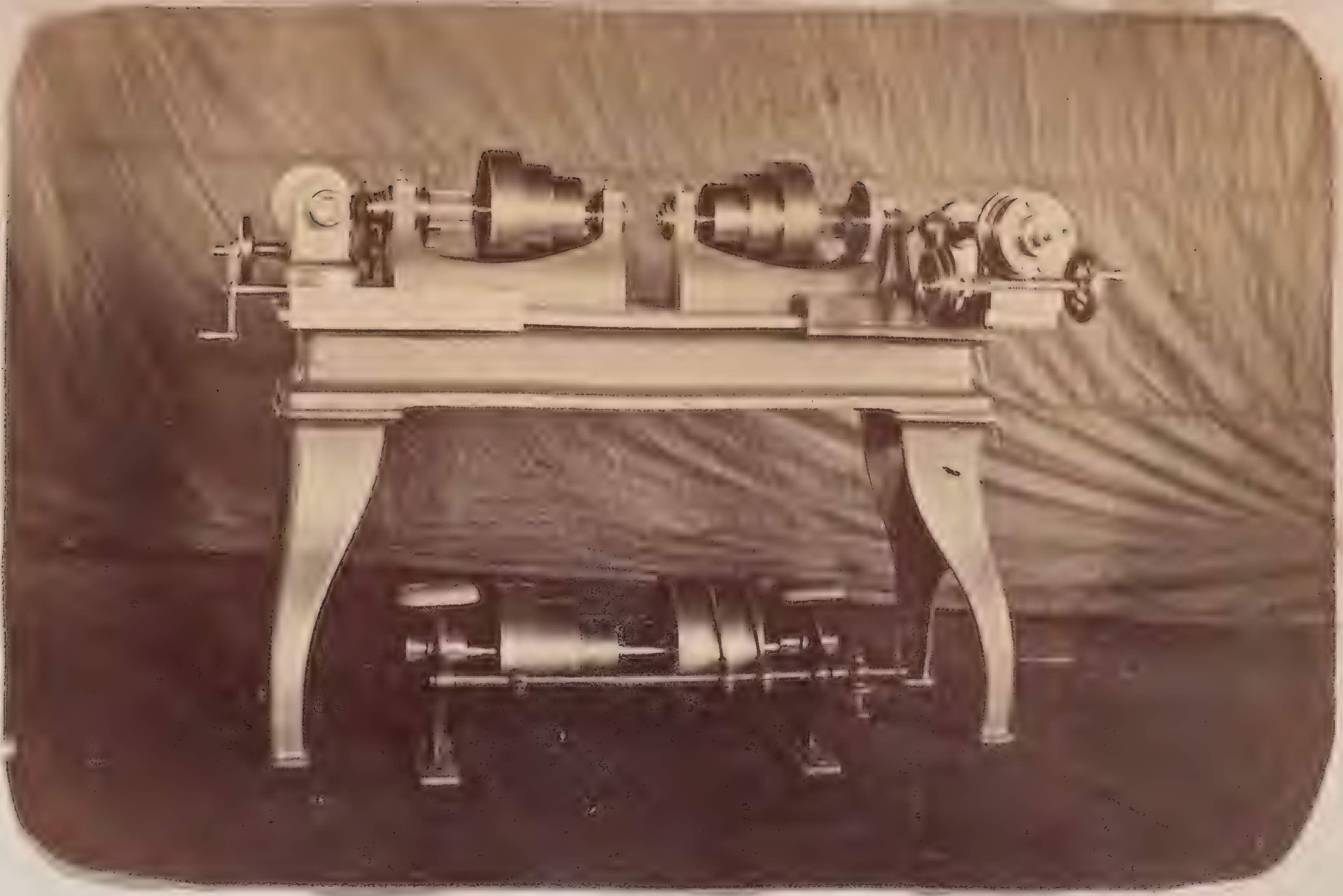
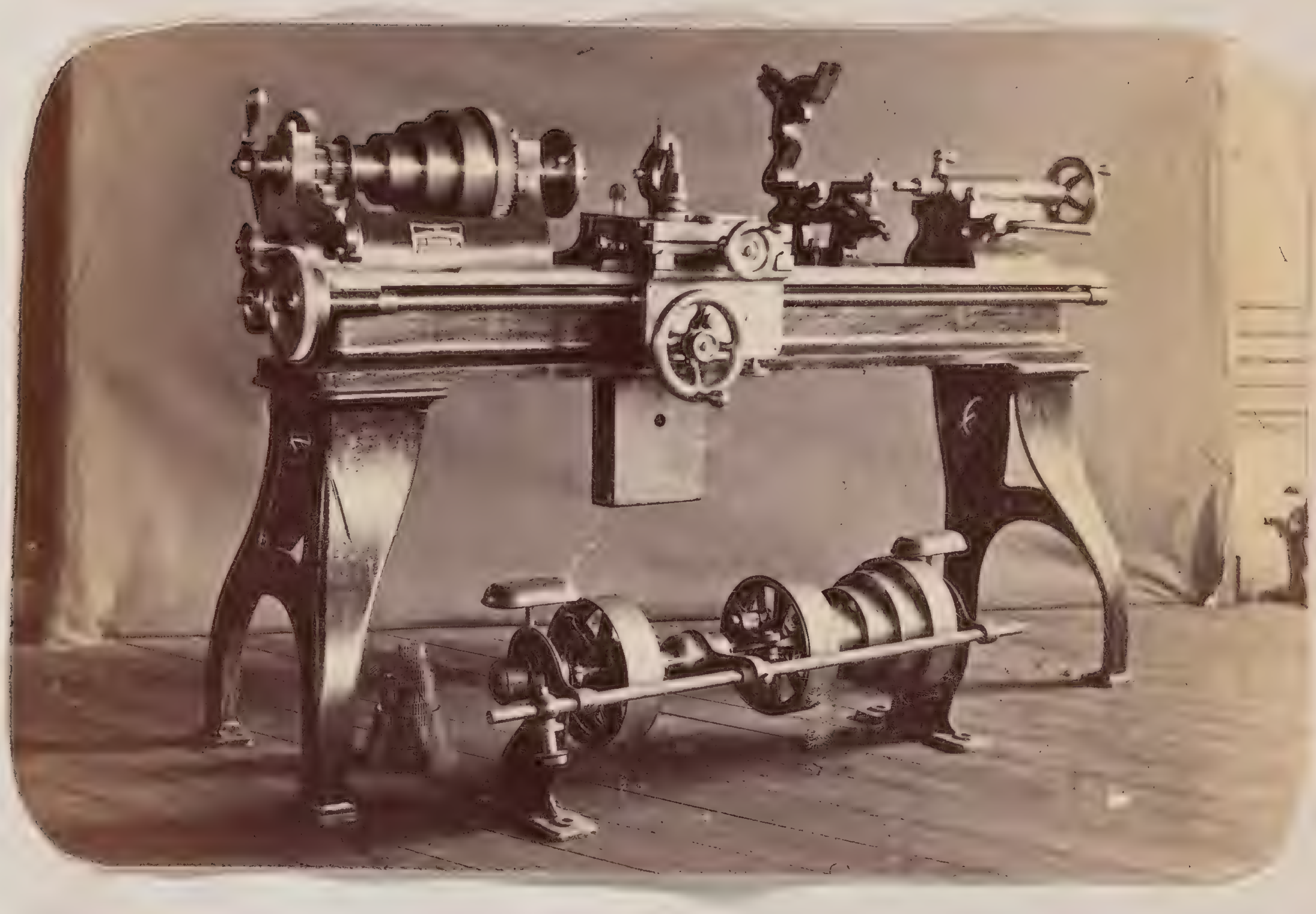


19" lathe

17



Cam cutter



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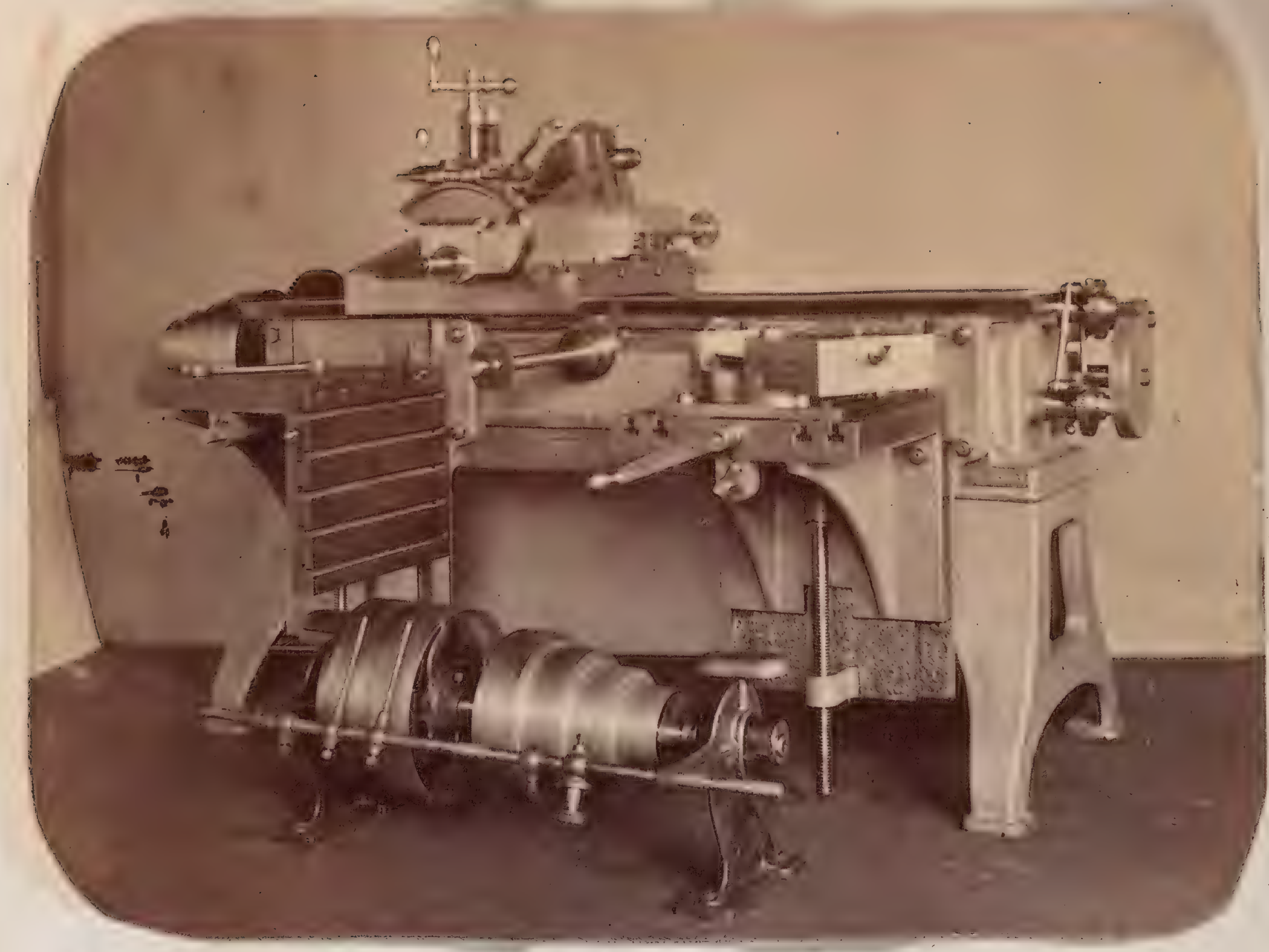
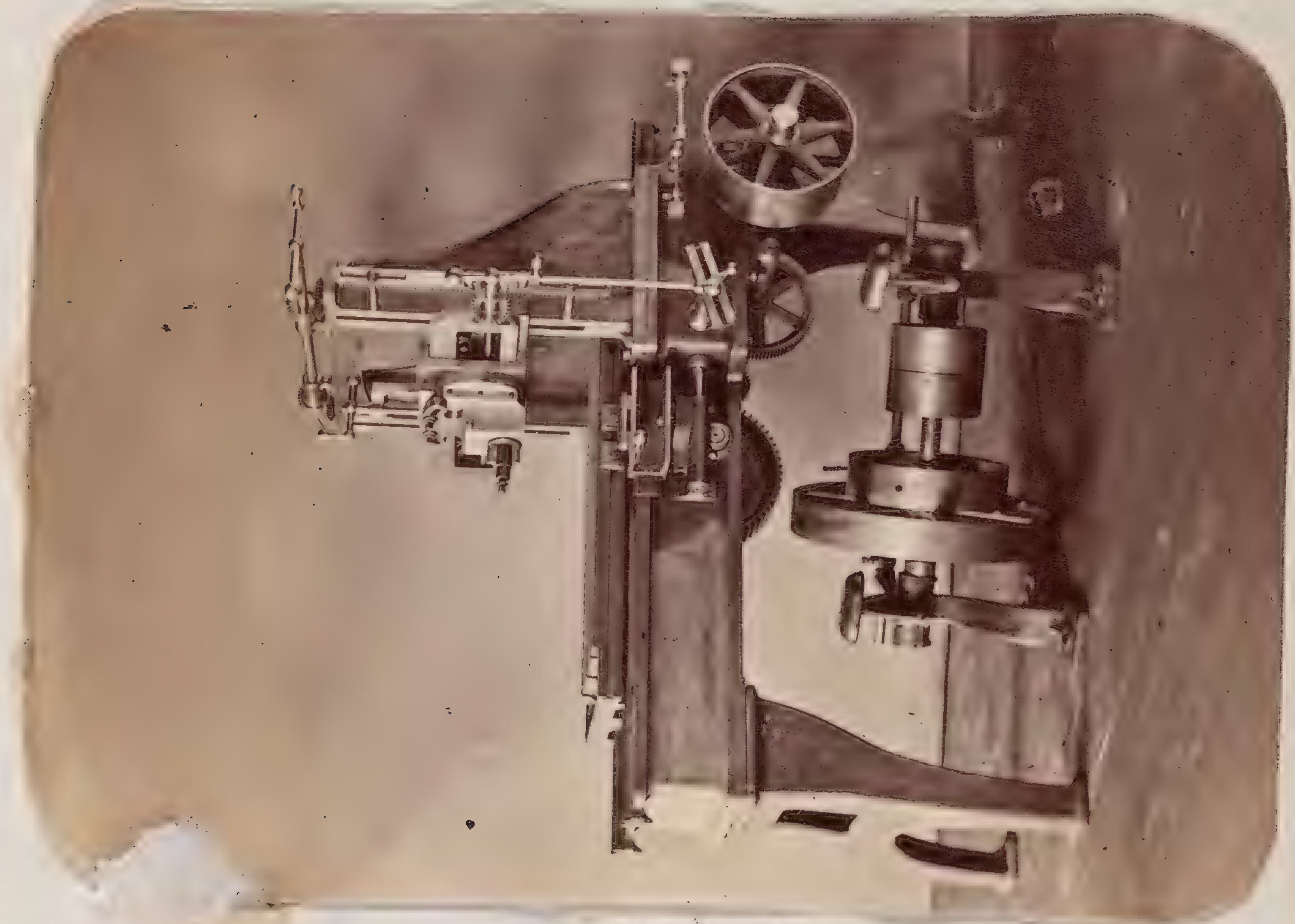


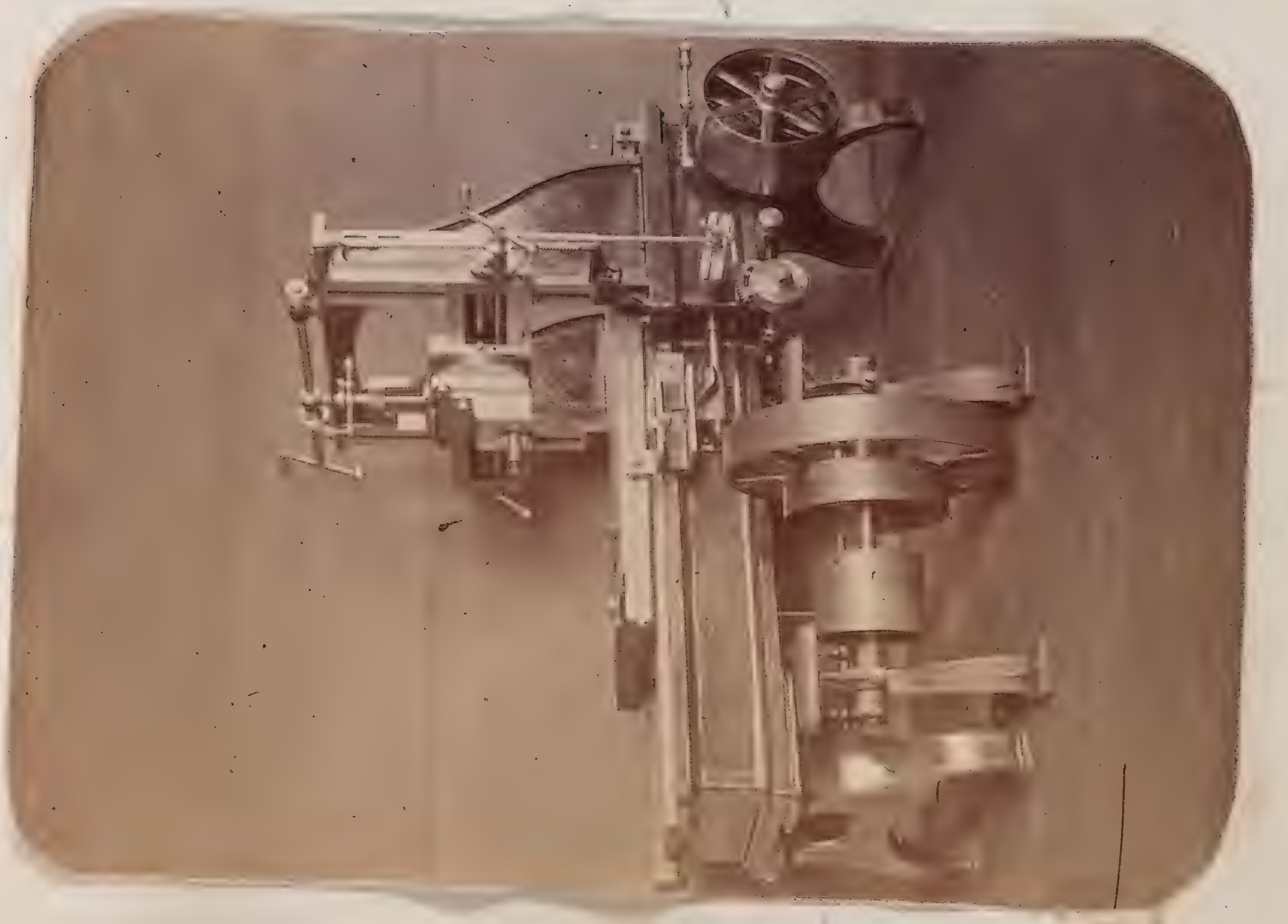
14" shaper

14



16" planer

16



20" planer

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Pratt & Whitney

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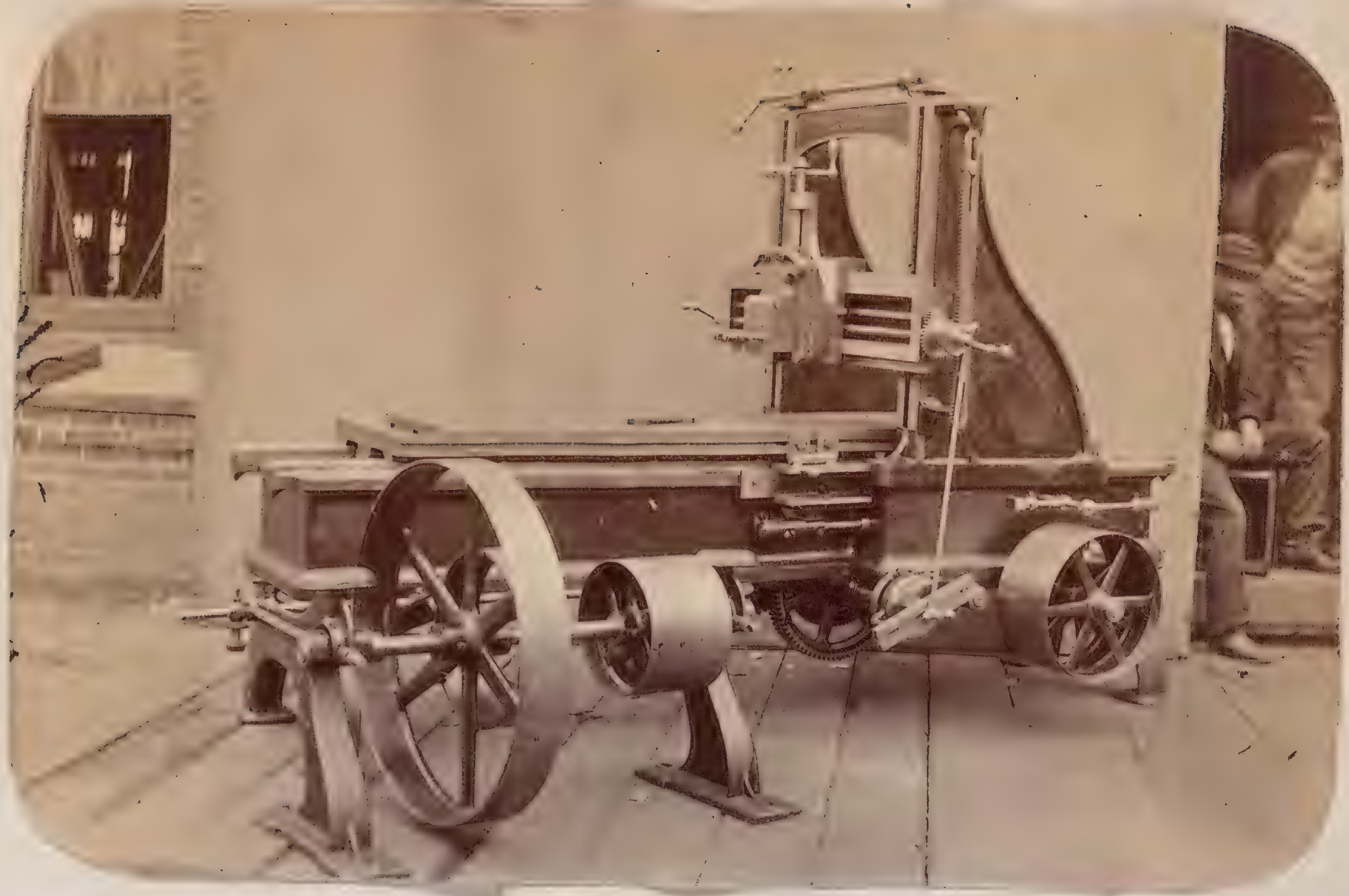
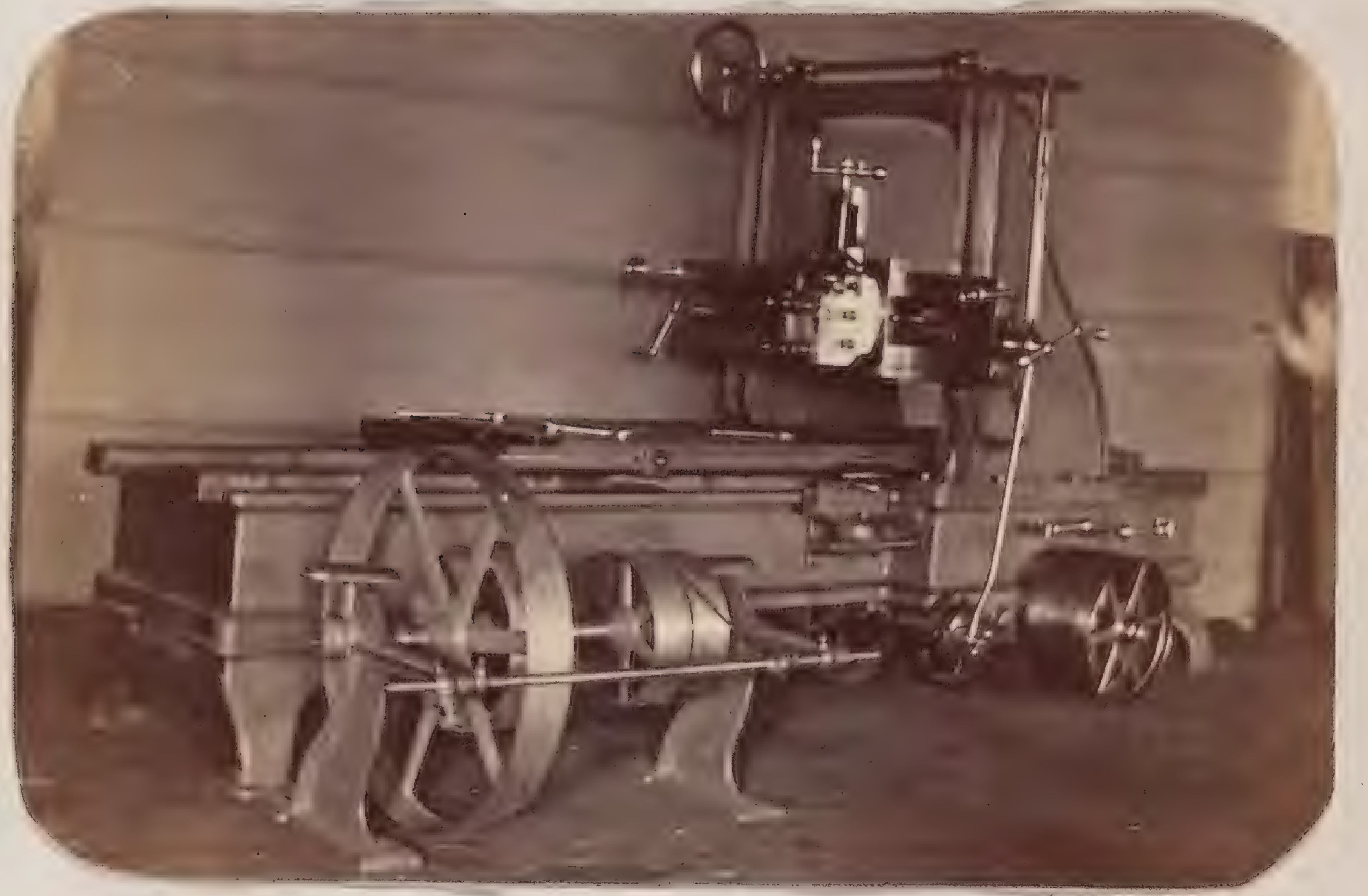


24" Planer



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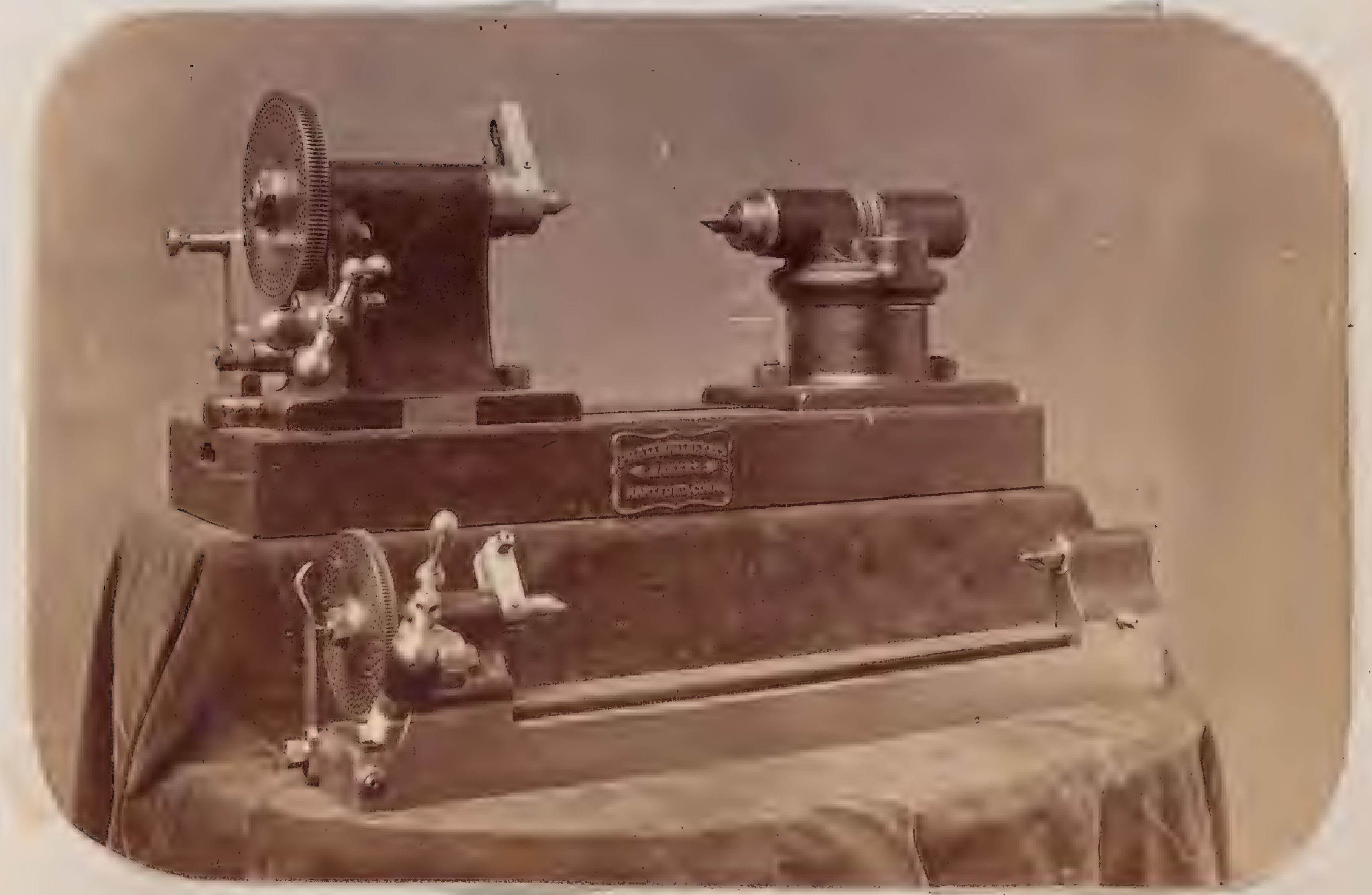
34" planer



11" & 12" planer centers

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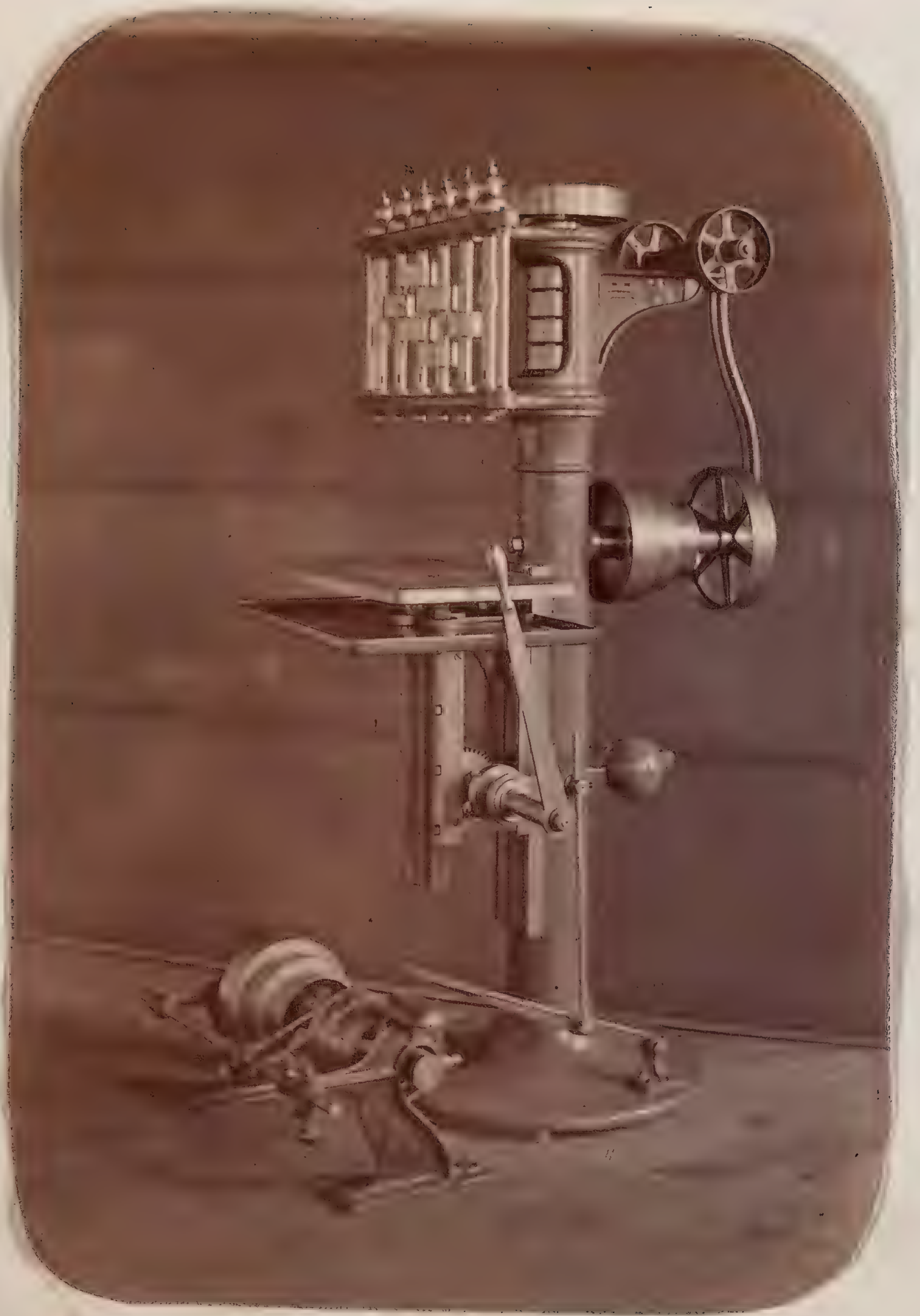

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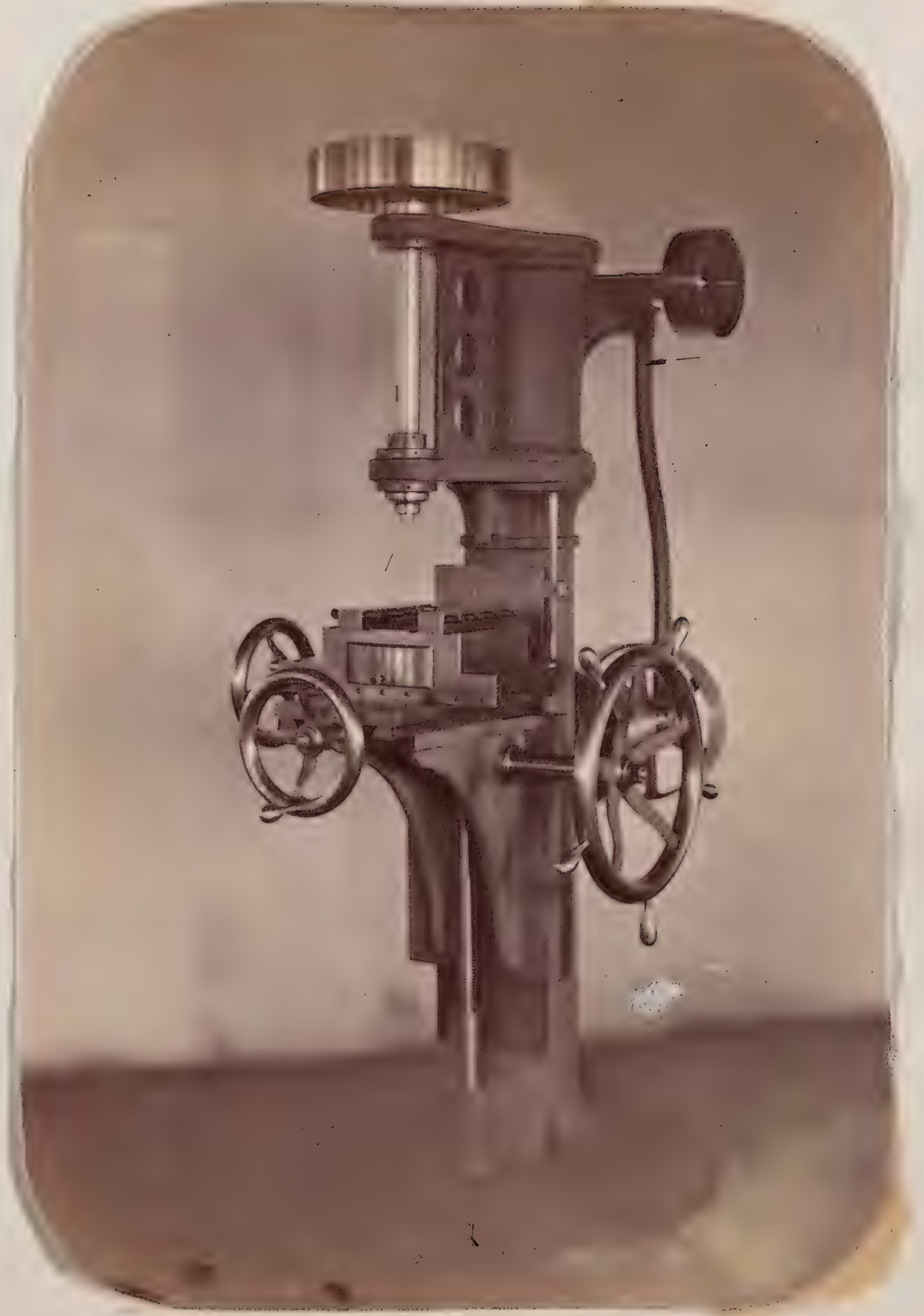
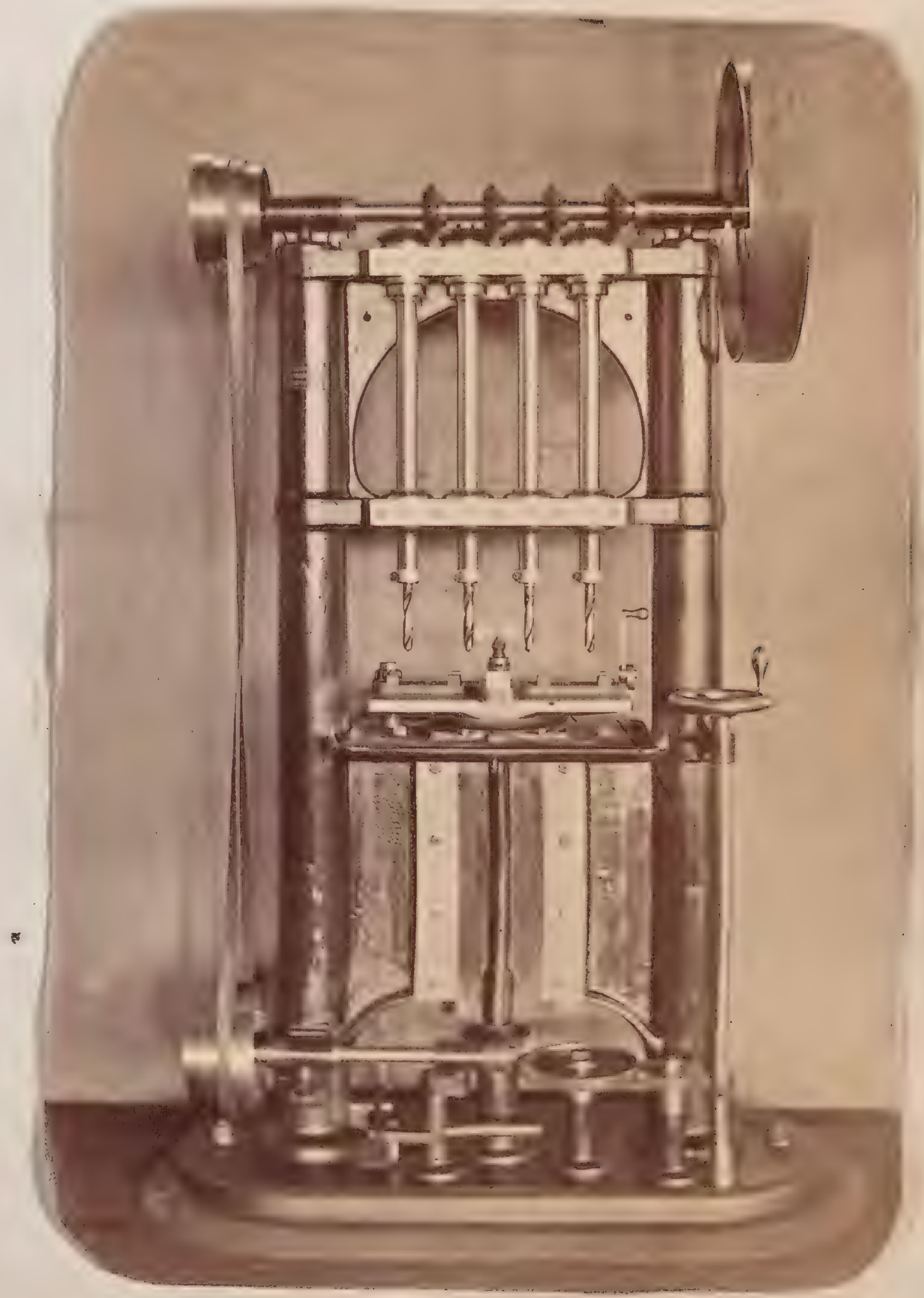


die sinker



fish plate drill

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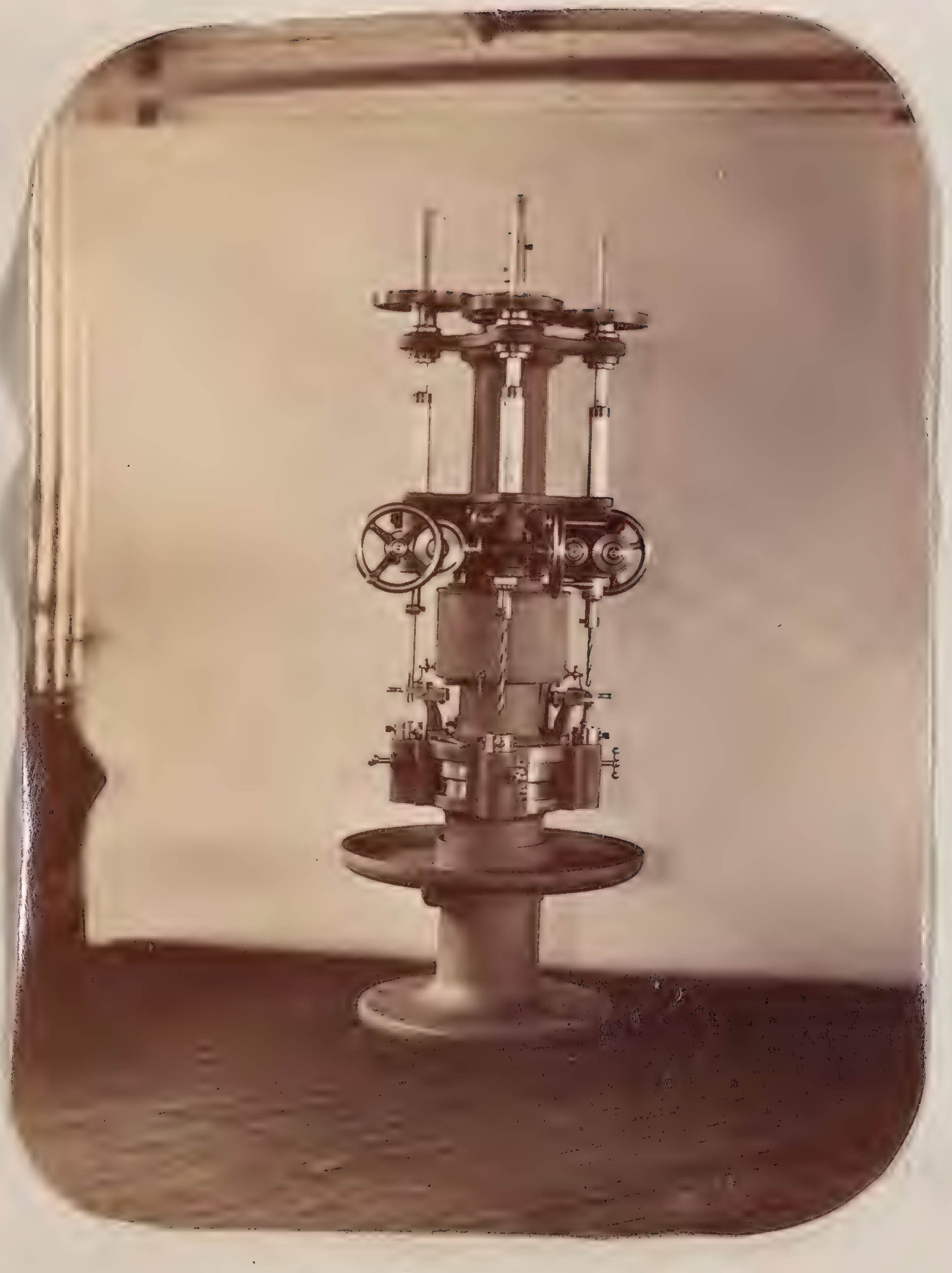
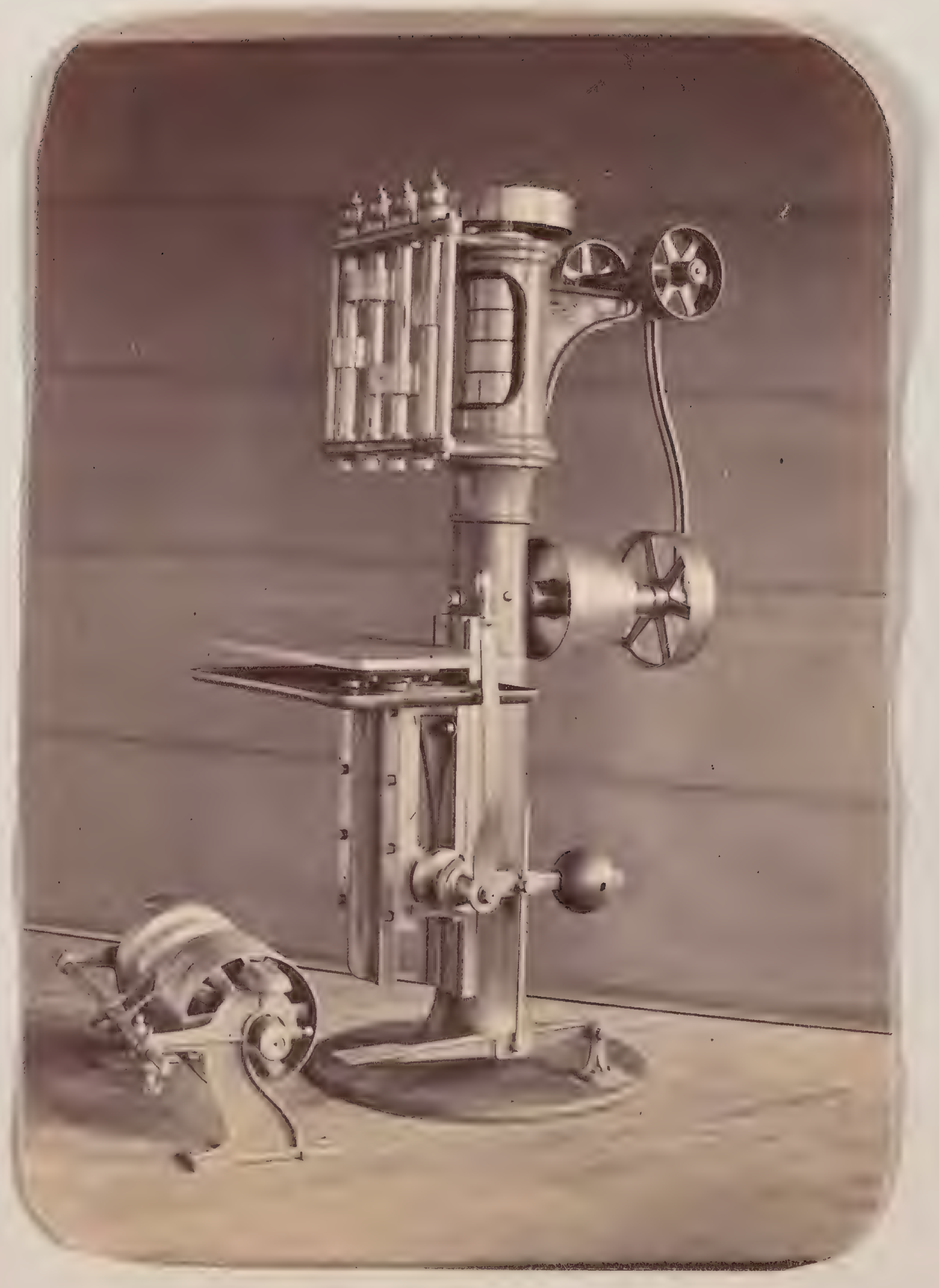


4 spindle drill



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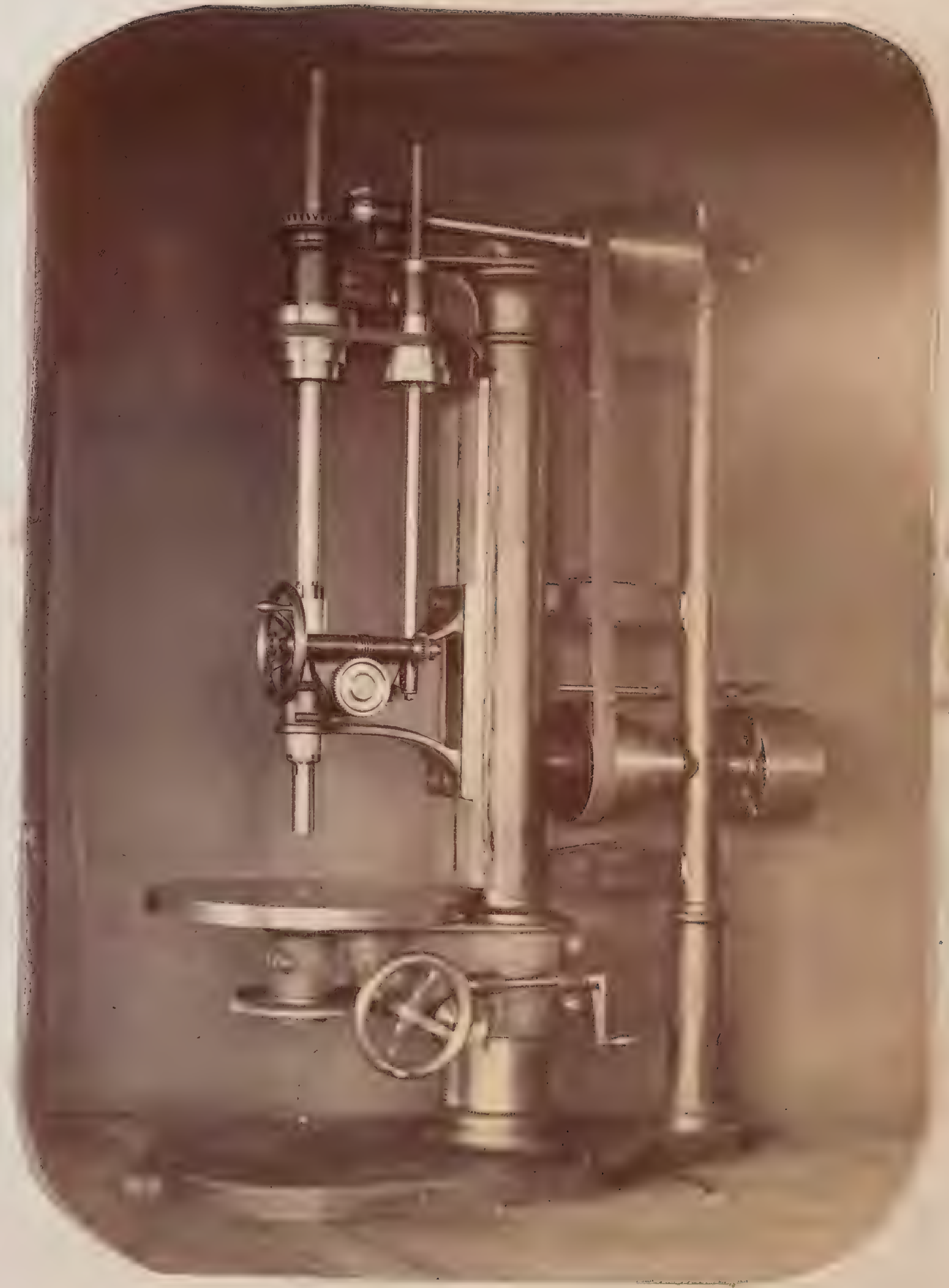

No 5 drill

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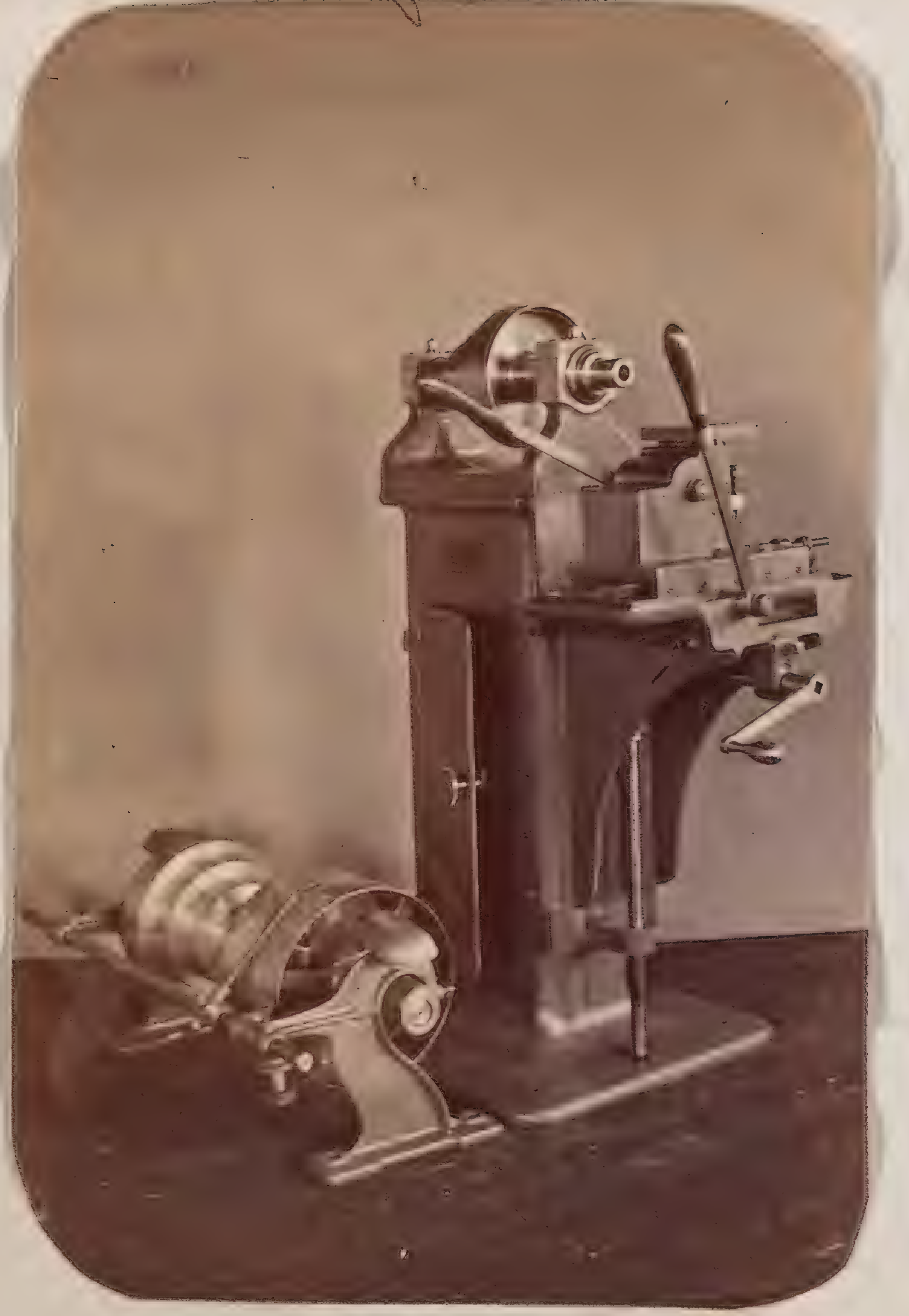

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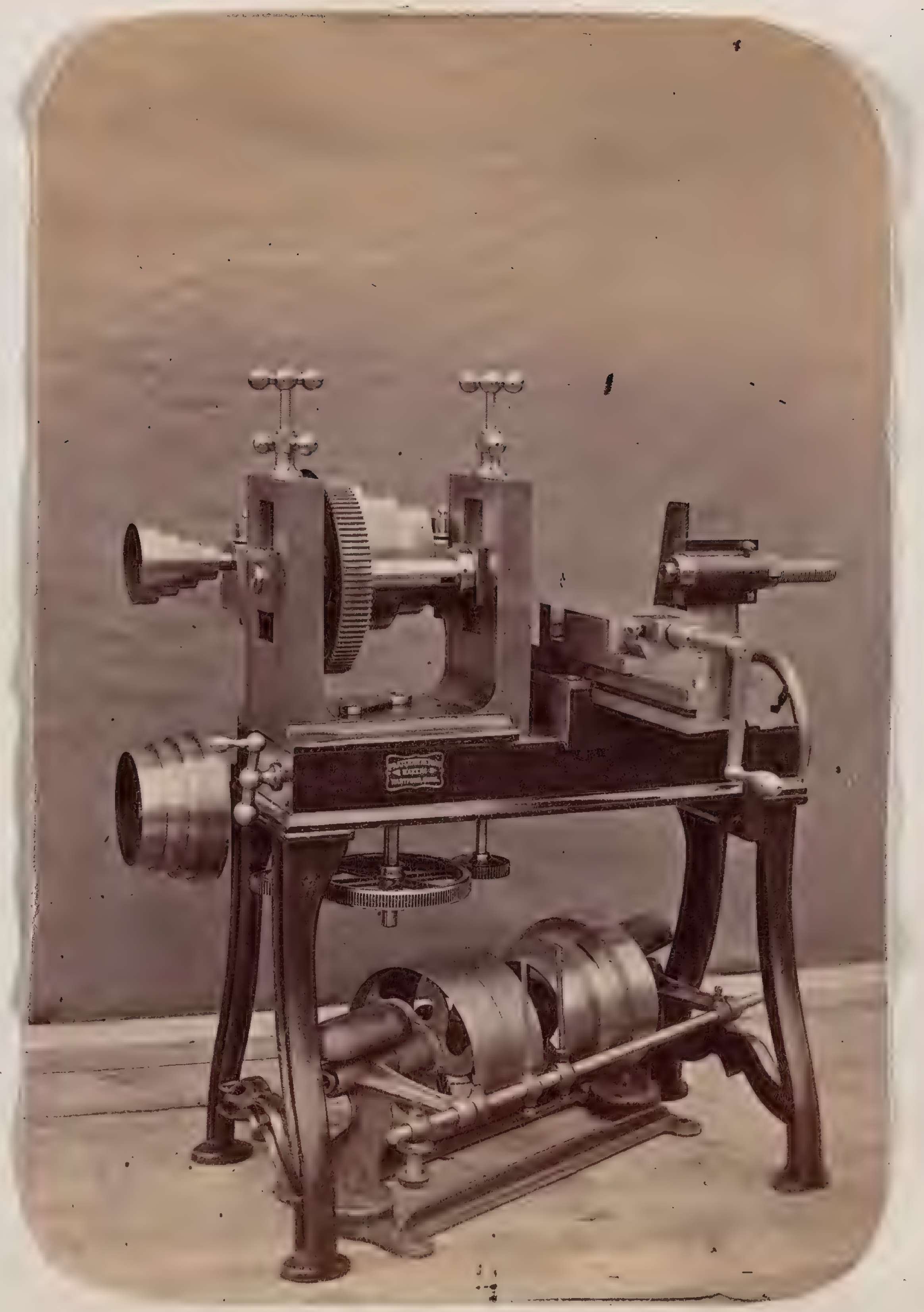

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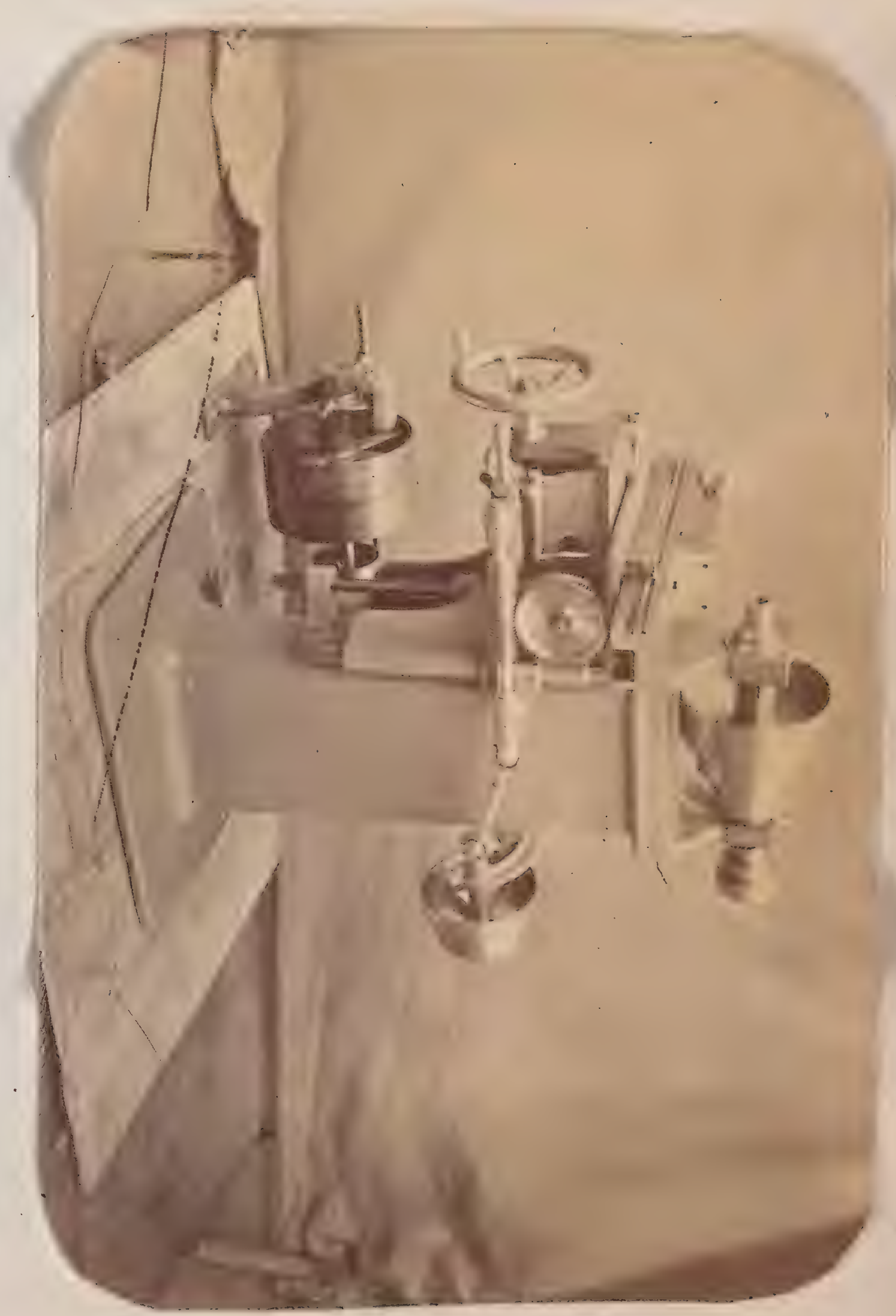

No 1 Miller

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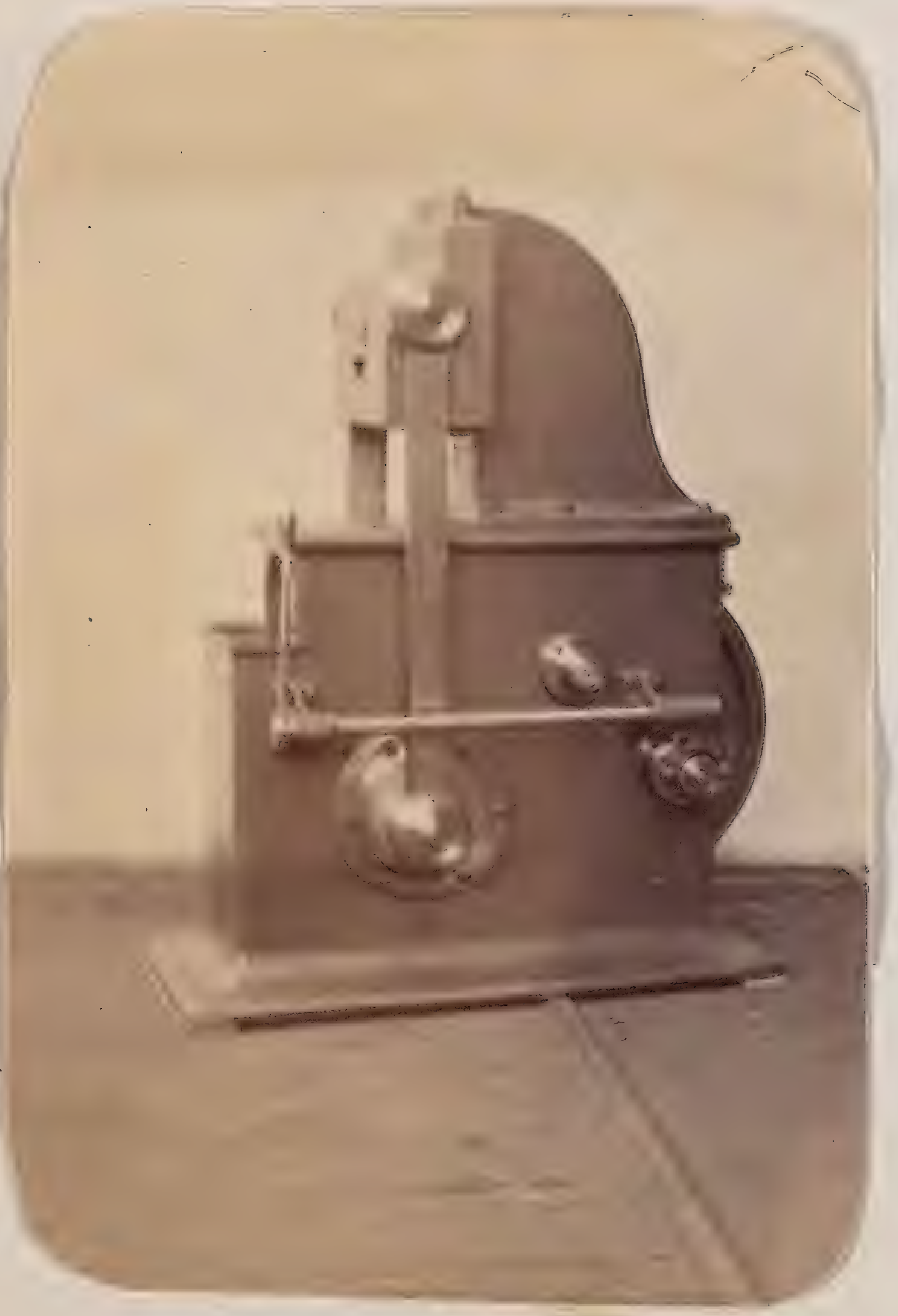
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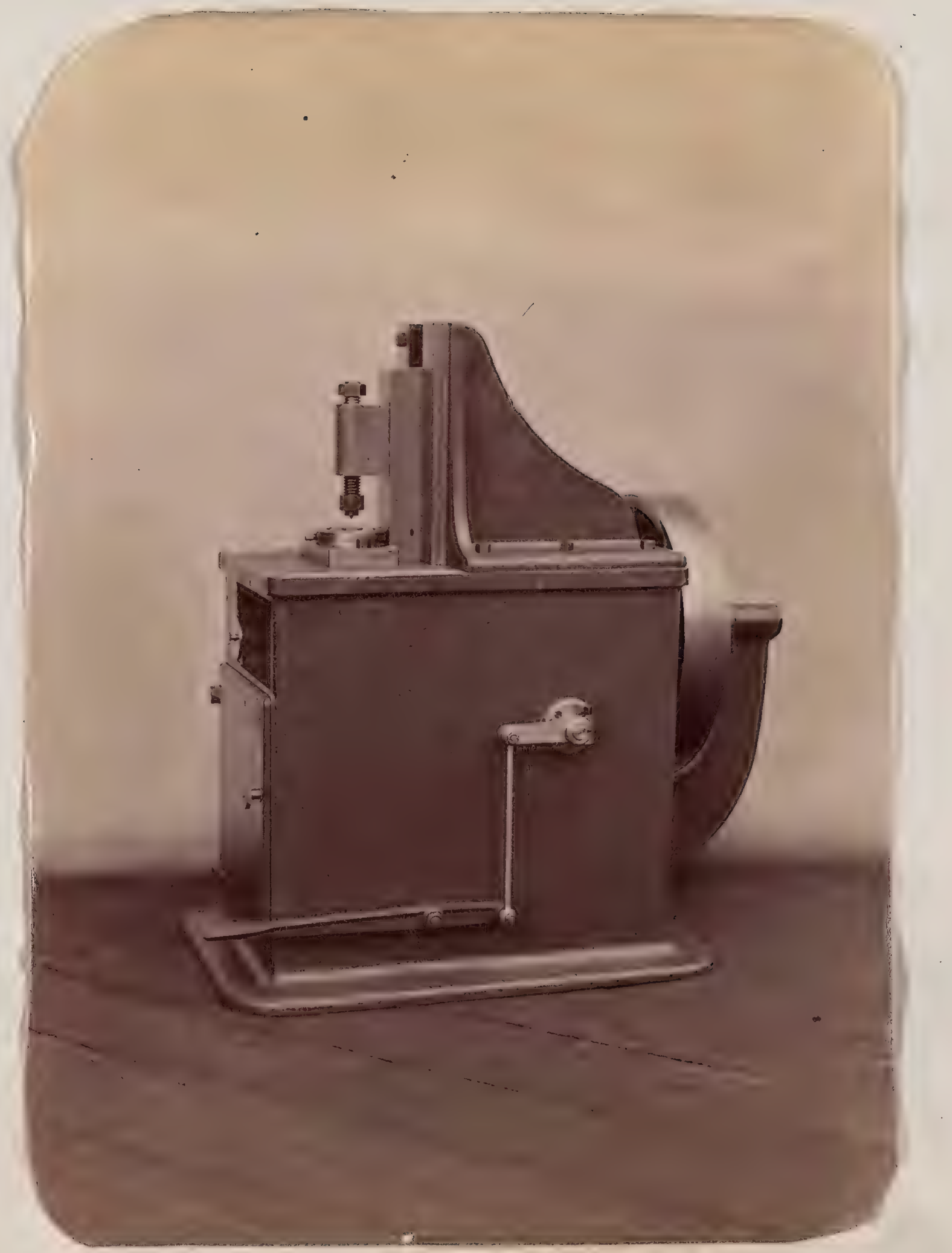
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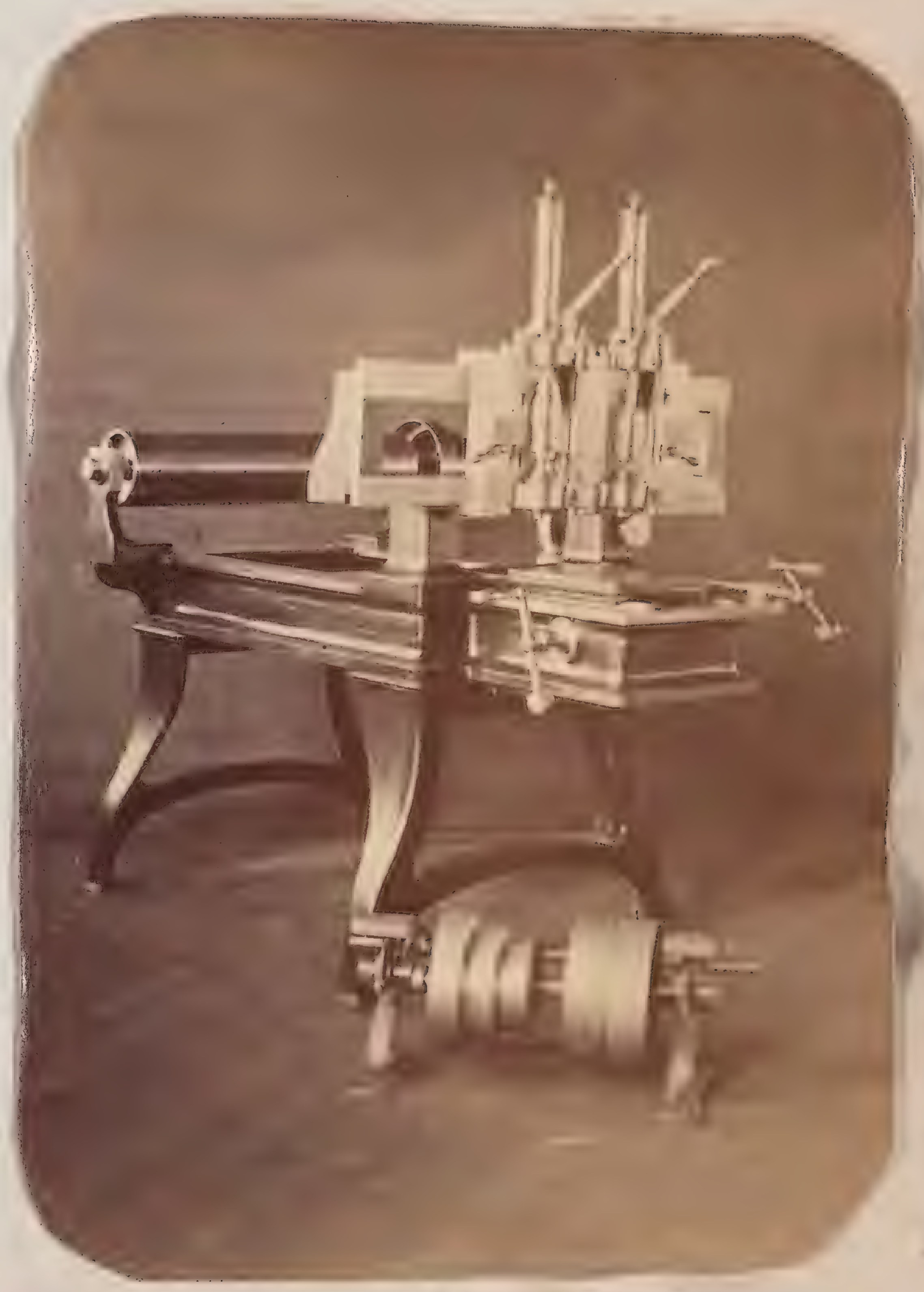
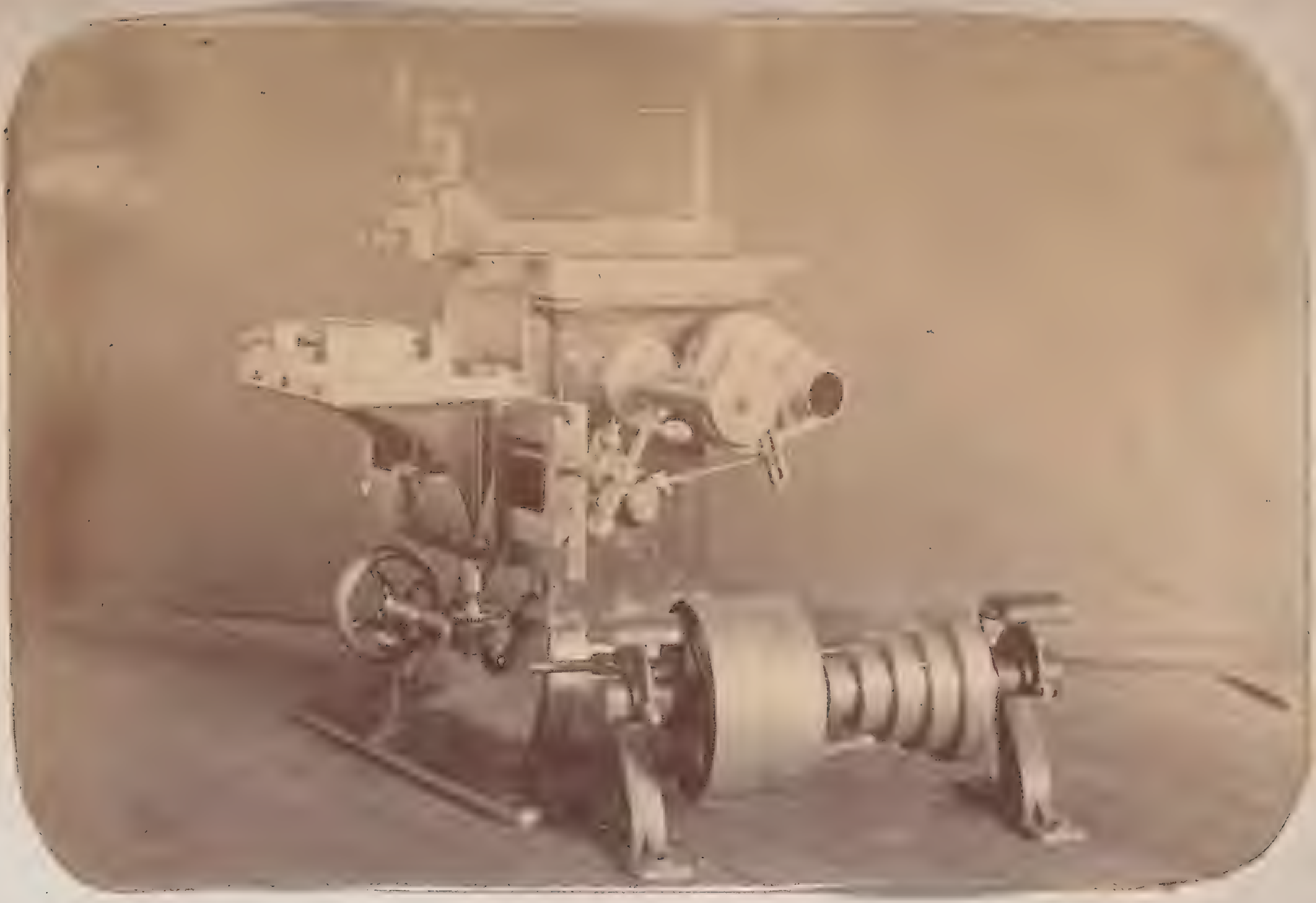
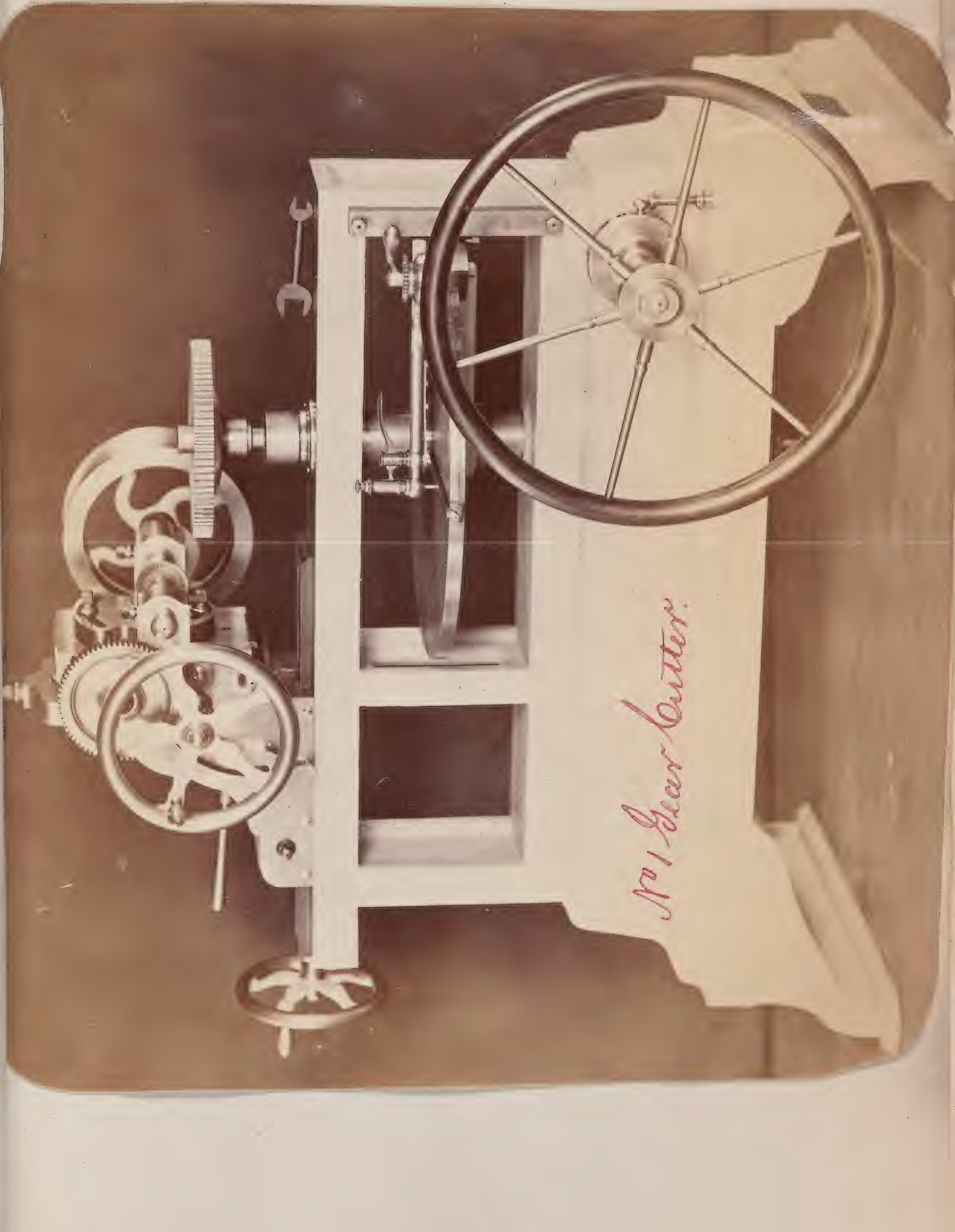

profiler

Pratt & Whitney



106

Putnam Machine Co



No 1 Gear Cutter.

1 4f

WM. SELLERS,
JOHN SELLERS, JR.,
COLEMAN SELLERS,

Established 1848.

J. SELLERS BANCROFT,
JAMES C. BROOKS.

WM. SELLERS & CO.,
PHILADELPHIA.

SELF-ACTING SLIDE LATHES.

For 48 Inches Swing and Under,

With screw cutting and turning feeds so arranged as to be instantly changed from one to the other, when both are in gear with the spindle; turning feed adjustable to any speed between the fastest and the slowest; for lathes to swing 16 inches, and under, the turning tool has a vertical adjustment on a single slide rest; for 20 inches and above, the slide rest is compound; and for 25 inch and above this rest has a self-acting cross feed; quick hand traverse to bottom rest on all sizes; for 20 inch swing and under, the spindles are made of hardened cast steel, running in hardened cast steel bearings, and all other sizes up to 48 inches, inclusive, have steel spindles, running in best composition bearings. Beds flat on top with improved hold down for poppet head, insuring the centre being in line with the axis of live spindle. Concentric hold fast to spindle of poppet head. Back stay.

Lathes over 48 Inches Swing,

With cast iron spindles, and the cone pulleys and back shaft drive through the face plate only, with fifteen changes of speed; self-acting screw feed, used for both screw cutting and turning, and self-acting cross feed; bed with three flat surfaces for saddle, so arranged as to receive pressure of cut within the bed surface; rack movement for shifting poppet head.

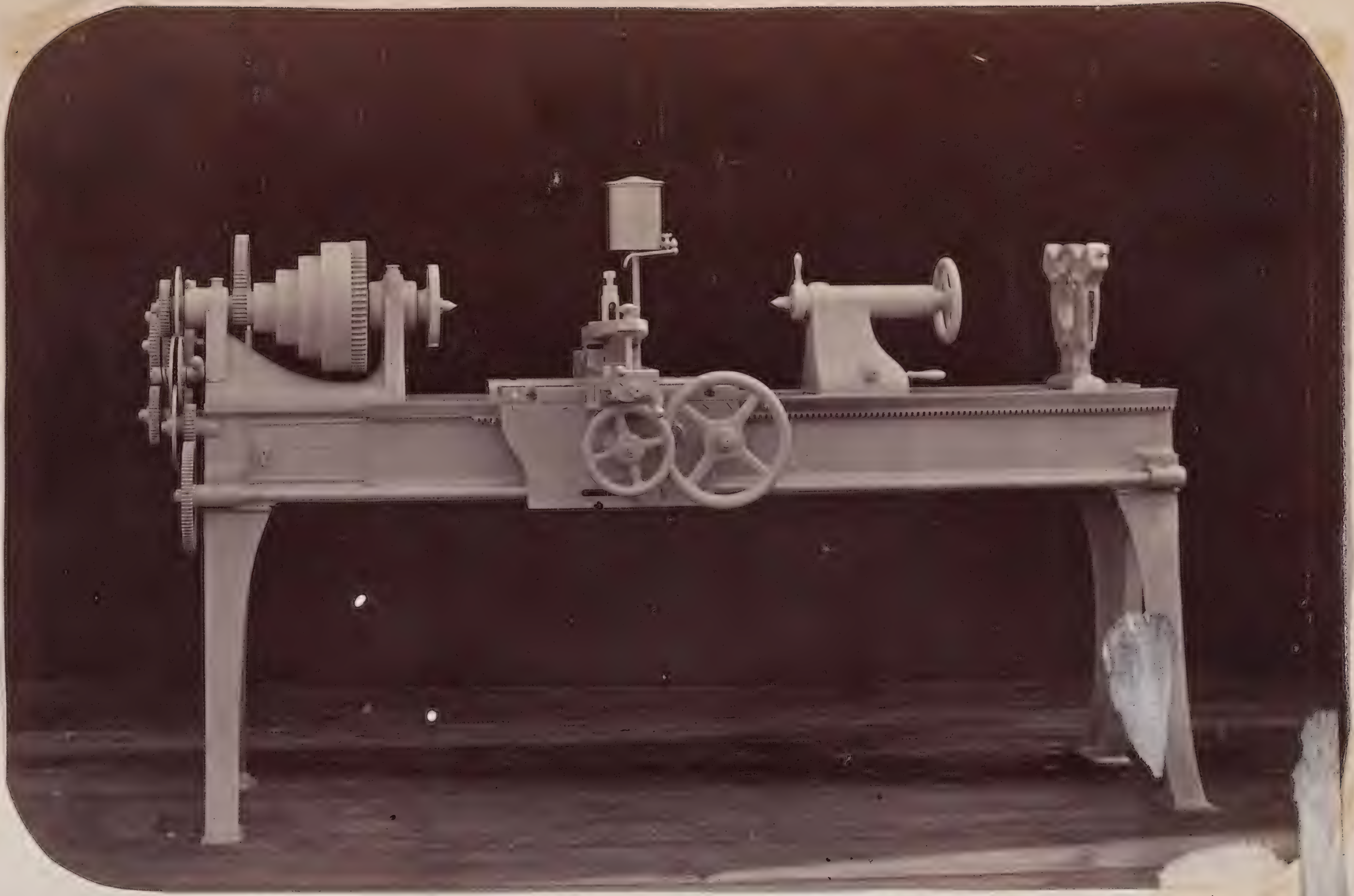
Feed Screw on all Sizes Supported the Entire Length.

Beds of any required length. Over head shaft with ball and socket hangers and iron cone pulleys turned inside, so as to be perfectly balanced; wrought iron wrenches. Wrought iron work case hardened.

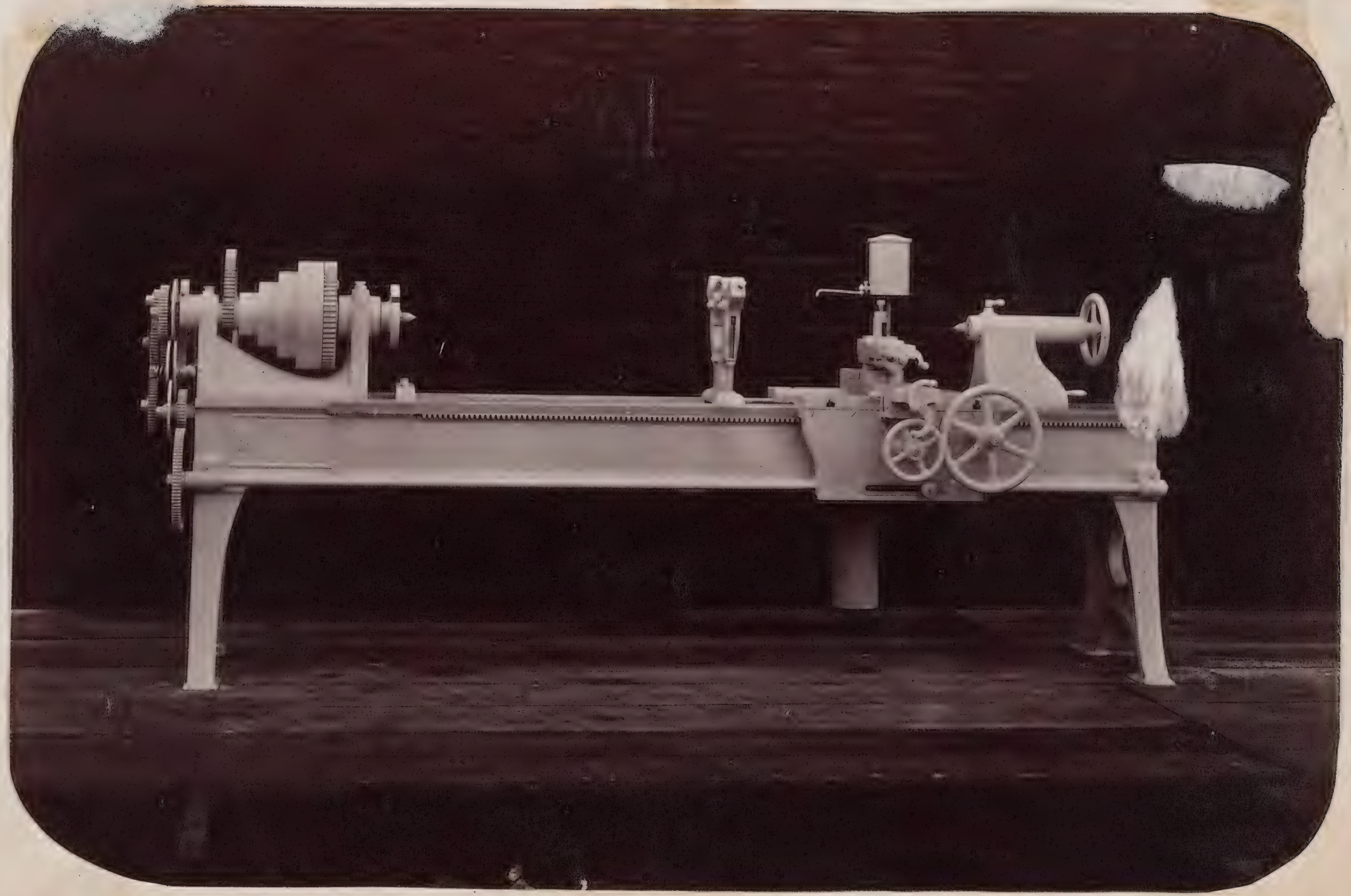
LATHES, SELF-ACTING SLIDE.

Name of lathe: that is diam. of piece will swing clear of bed.	Diam. will swing over rest.	Distance from center to center of girts.	No. of girts beyond live head.	Distance between centers.	Total length of bed.	Price screw cutting and turning.	Price turning only.	Price per girt for extra length of bed.
12″	10″	10″	4	2′ 5¼″	4′ 4½″	$..........	$..........	$..........
15″	13½″	13″	4	3′ 2″	5′ 8⅝″	$..........	$..........	$..........
20″	17¼″	16¼″	4	4′ 0½″	7′ 1″	$..........	$..........	$..........
25″	21⅞″	20¼″	4	5′ 1″	9′ 0¼″	$..........	$..........	$..........
30″	26⅛″	24⅛″	4	6′ 0⅞″	10′ 9″	$..........	$..........	$..........
36″	31⅞″	29″	4	7′ 4½″	12′ 10⅝″	$..........	$..........	$..........
42″	37½″	33¾″	4	8′ 7½″	14′ 11″	$..........	$..........	$..........
48″	42⅝″	38½″	4	9′ 10½″	17′ 0¾″	$..........	$..........	$..........
60″	49″	28″	6	8′ 10¼″	17′ 2⅛″	$..........	$..........	$..........

Terms: Cash upon delivery at our Works. Boxing and Porterage in addition at cost.



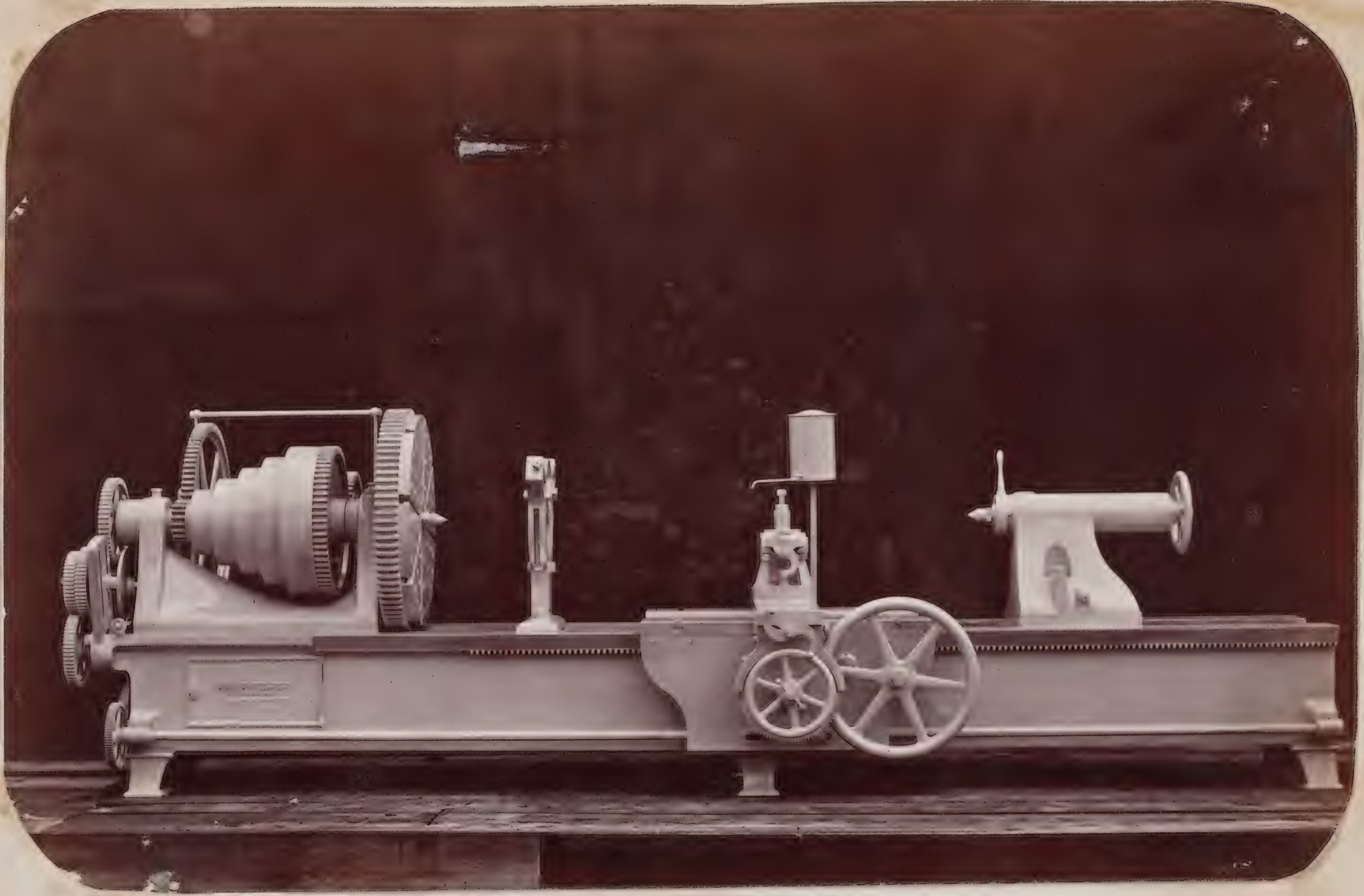
12" Swing



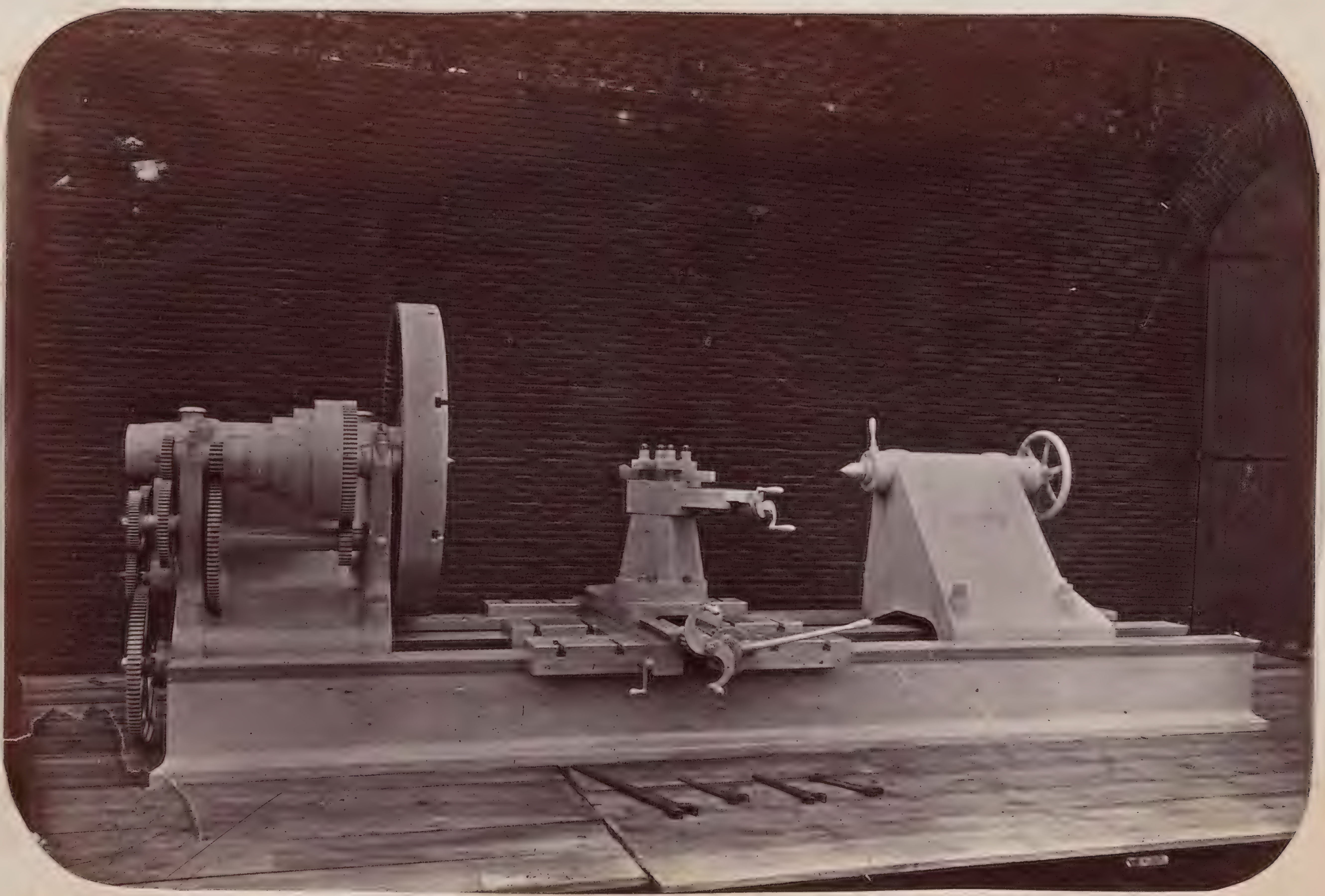
28" Leving

126

20



36" swing



60' swing

60

WM. SELLERS.
JOHN SELLERS, JR.
COLEMAN SELLERS.

ESTABLISHED 1848.

J. SELLERS BANCROFT.
JAMES C. BROOKS.

WM. SELLERS & CO.,

PHILADELPHIA.

PATENT SELF-ACTING PLANING MACHINE,

For horizontal, vertical, and angular planing of any required length, with spiral gear-driving motion; positive geared feeds, self-acting in all directions, with tool-lifter operating at all angles, and improved belt shifter.

This machine stands parallel with the overhead driving-shaft, thus economizing room in the shop; the bed and table are fitted to uniform gauges so that the table will work with either end toward the uprights, or on any bed of the same size machine, thus insuring the correctness of the ways.

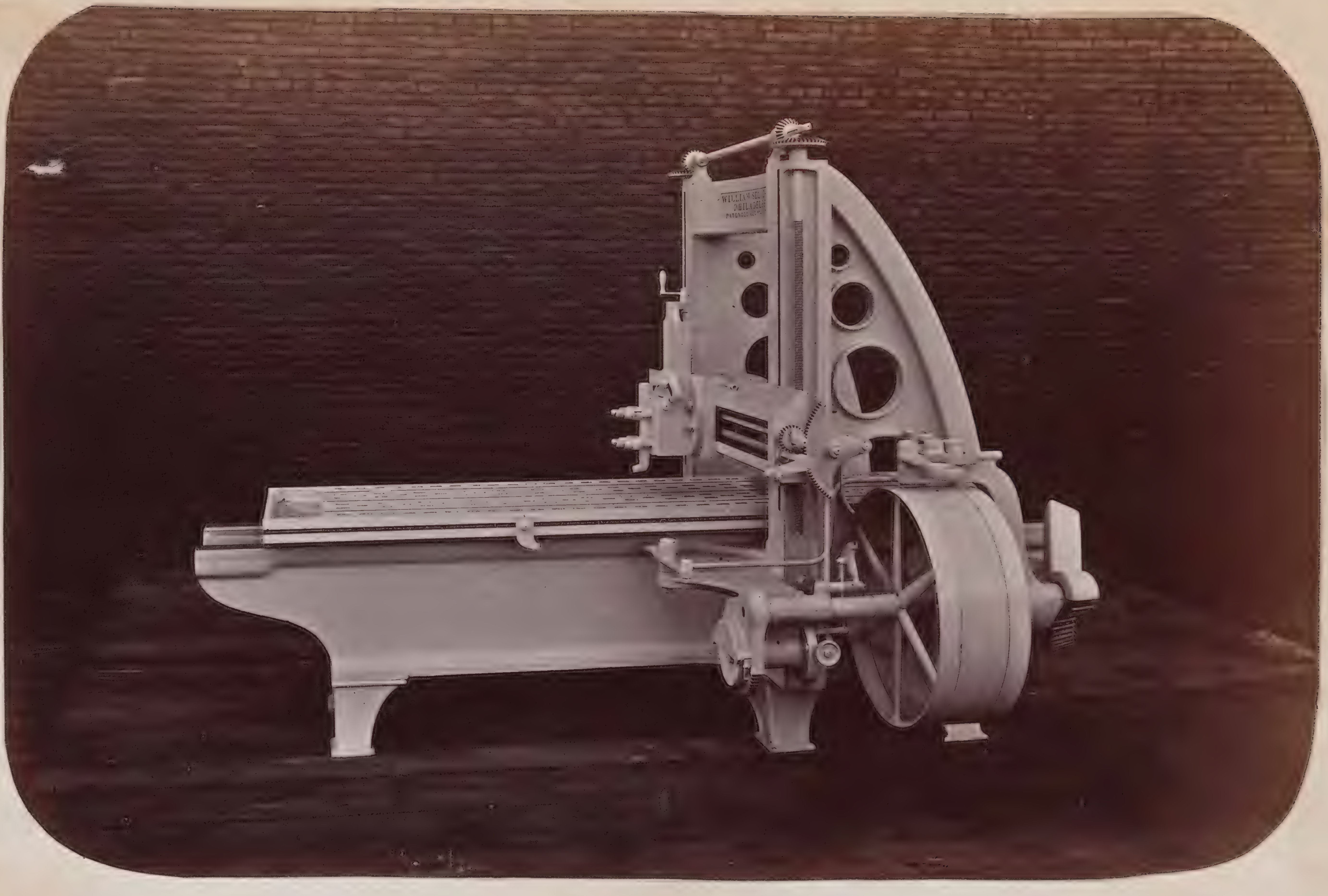
The overhead shaft is fitted with ball and socket hangers, and the pulleys are perfectly balanced; a full set of wrought-iron wrenches accompanies each machine, and wrought-iron work is case-hardened. These machines can be of any required length.

PLANING MACHINES,

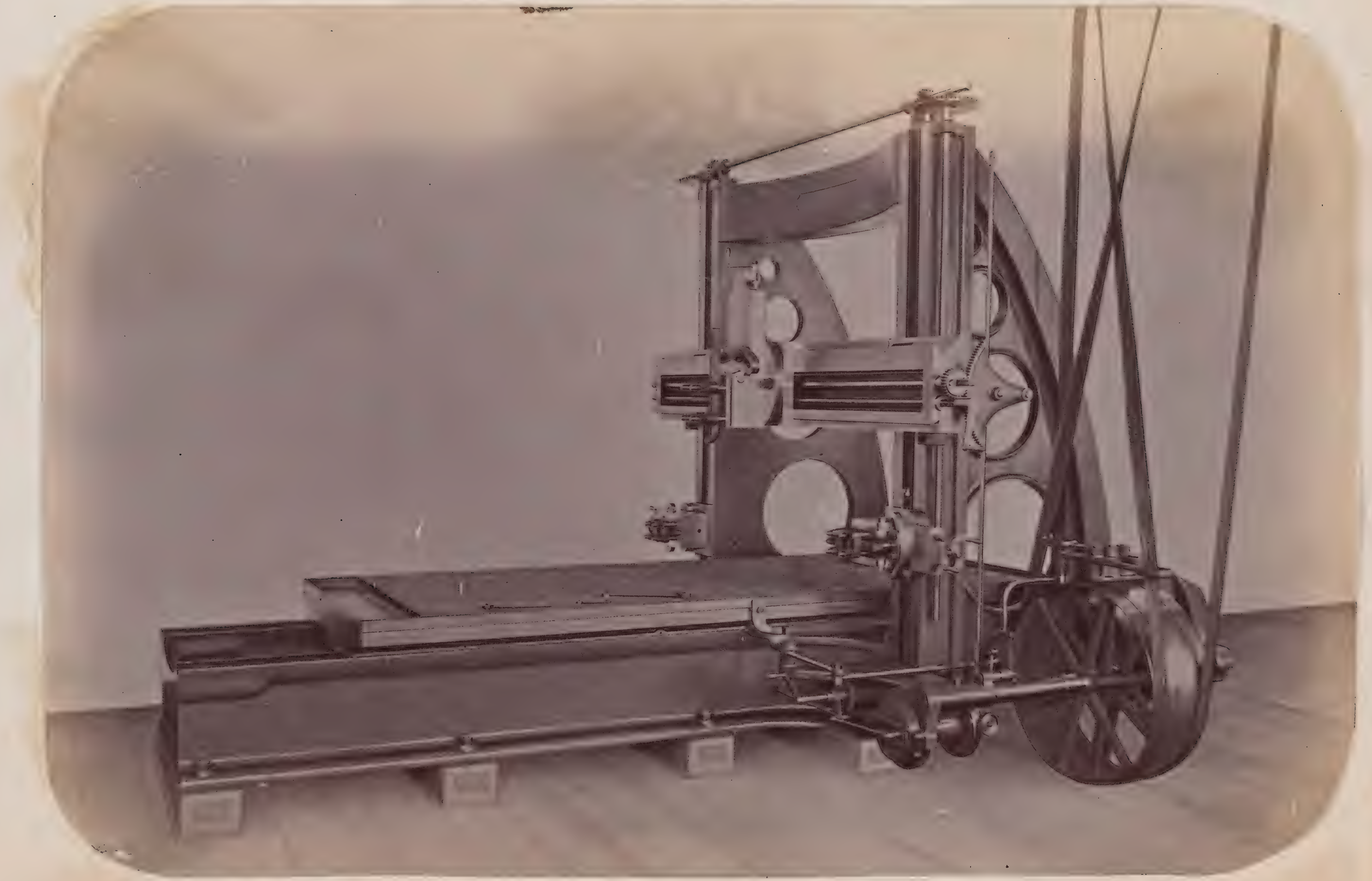
WITH DIAGONAL DRIVING MOTION, ENABLING THEM TO BE PLACED PARALLEL TO LATHES.

Name of Planer.	WILL PLANE		Shortest Length of Table.	PRICE.			
	In Width.	In Height.		Shortest Length	Per additional foot of Table.	Extra Slide Rest on Cross Head.	Vertical Slide Rest on both Uprights.
20″	20″	20″	3′	$..............	$..............		
25″	25″	25″	3′ 7″	$..............	$..............	$..............	
30″	30″	30″	4′ 2″	$..............	$..............	$..............	
36″	36″	36″	4′ 8″	$..............	$..............	$..............	
42″	42″	42″	5′ 4″	$..............	$..............	$..............	
48″	48″	48″	6′	$..............	$..............	$..............	$..............
54″	54″	54″	6′ 7″	$..............	$..............	$..............	$..............
60″	60″	60″	7′ 3″	$..............	$..............	$..............	$..............
72″	72″	72″	8′ 6″	$..............	$..............	$..............	$..............

Terms: Cash upon delivery at our Works. Boxing and Porterage in addition at cost.



36"



72"

72

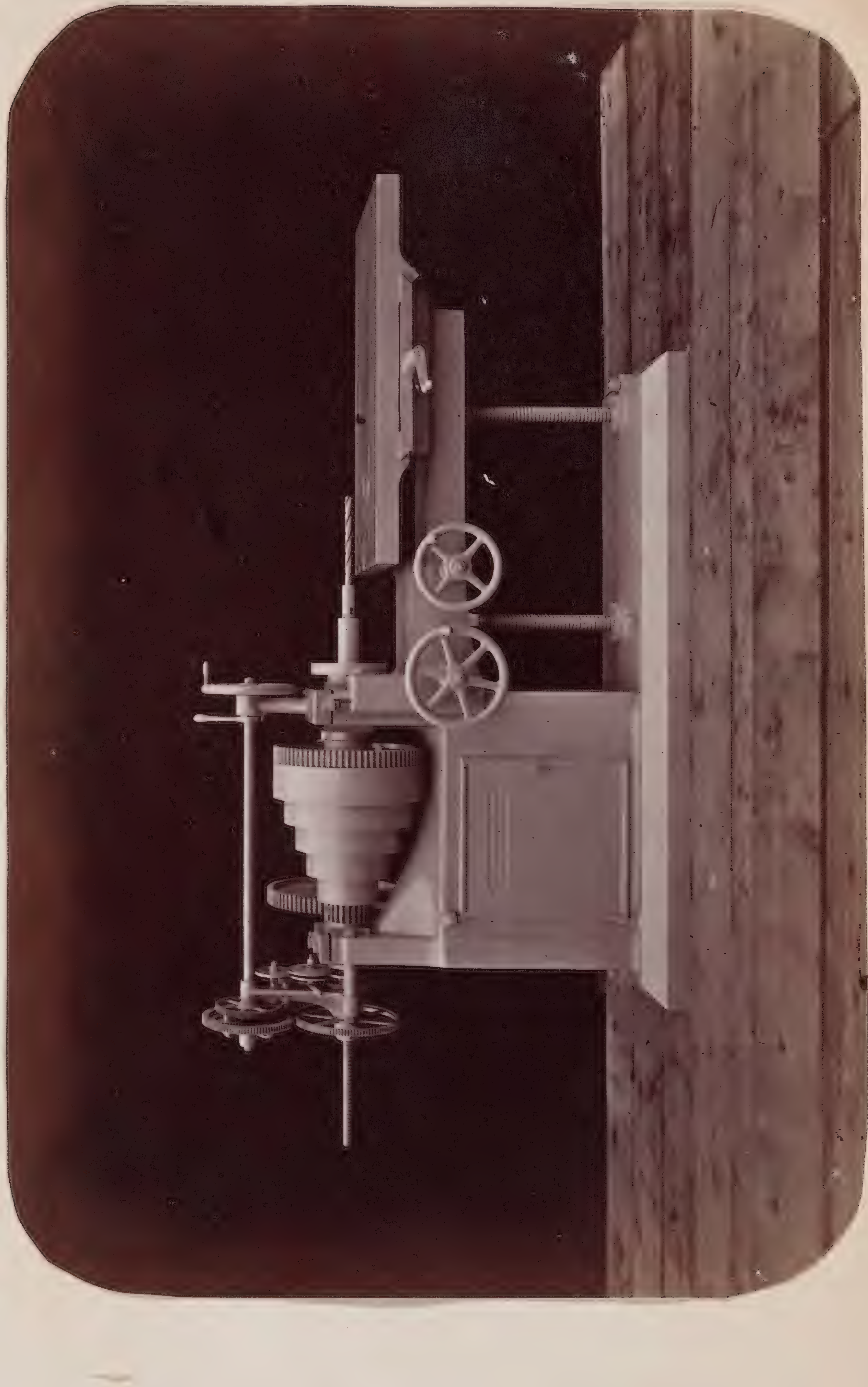
HORIZONTAL DRILLING AND BORING MACHINE,

With patent variable feed and quick hand traverse to boring spindle, arranged so as to be changed instantly from one to the other; compound tables arranged to move vertically, with horizontal movement at right angles, and parallel to drilling spindle; arbor which carries drilling spindle arranged with face plates so that the machine can be used as a face lathe; overhead shaft; iron cone pulleys turned inside so as to be perfectly balanced; ball and socket hangers, and a full set of wrought iron wrenches. Length of traverse to drilling spindle, 24 inches. Diameter of piece will swing over table 51 inches. Wrought iron work case-hardened. $

Extra slide rest to bolt on face plate for squaring pipes or facing off work . . . . $

Terms: Cash upon delivery at our Works.

Boxing and Porterage in addition at cost.



WM. SELLERS.

JOHN SELLERS, JR.
COLEMAN SELLERS.

Established 1848.

J. SELLERS BANCROFT.
JAS. C. BROOKS.

WM. SELLERS & CO.,
PHILADELPHIA.

Boring and Turning Mill

WITH

COMPOUND SLIDE REST AND BORING BAR COMPLETE.

The holder for boring bar is so arranged as to be easily removed and a turning tool substituted; feeds self-acting in all directions, and at all angles; quick return motion to boring bar; face plate resting in an annular bearing somewhat similar to the slides of a planing machine; with an adjustable centre step to take any amount of the vertical strain that may be desired; over-head shaft; iron cone pulleys turned inside so as to be perfectly balanced; ball and socket hangers and wrought iron wrenches complete. Wrought iron work case hardened.

These mills, the smallest of which has a capacity of 84 inches, are adapted to bore with a boring bar having a double-ended cutter, or to bore with a single-pointed tool. Can be advantageously used in both boring and turning large pulleys, and in doing all work usually done on a facing lathe, with the advantage of ease of chucking, inasmuch as the face plate being horizontal, work laid upon it may be moved about until correctly centred and then clamped to place. These mills have no part of the machinery extending below the surface of the floor upon which they rest. They should be placed on foundation walls so built as to make a pit below the centre of machine, into which chips fall, to be removed at convenience. Many of them are used in locomotive shops for boring truck wheels and tire. Numbers of driving boxes also are placed in a circle on the plate and faced off at one operation in an economical manner. The feeds are so arranged as to enable the roughing cut to be made with fine feed, but the finishing cuts with very broad feed, say $\frac{3}{8}$ inch to a revolution, to prevent wear of finishing tool (which takes a light depth of cut).

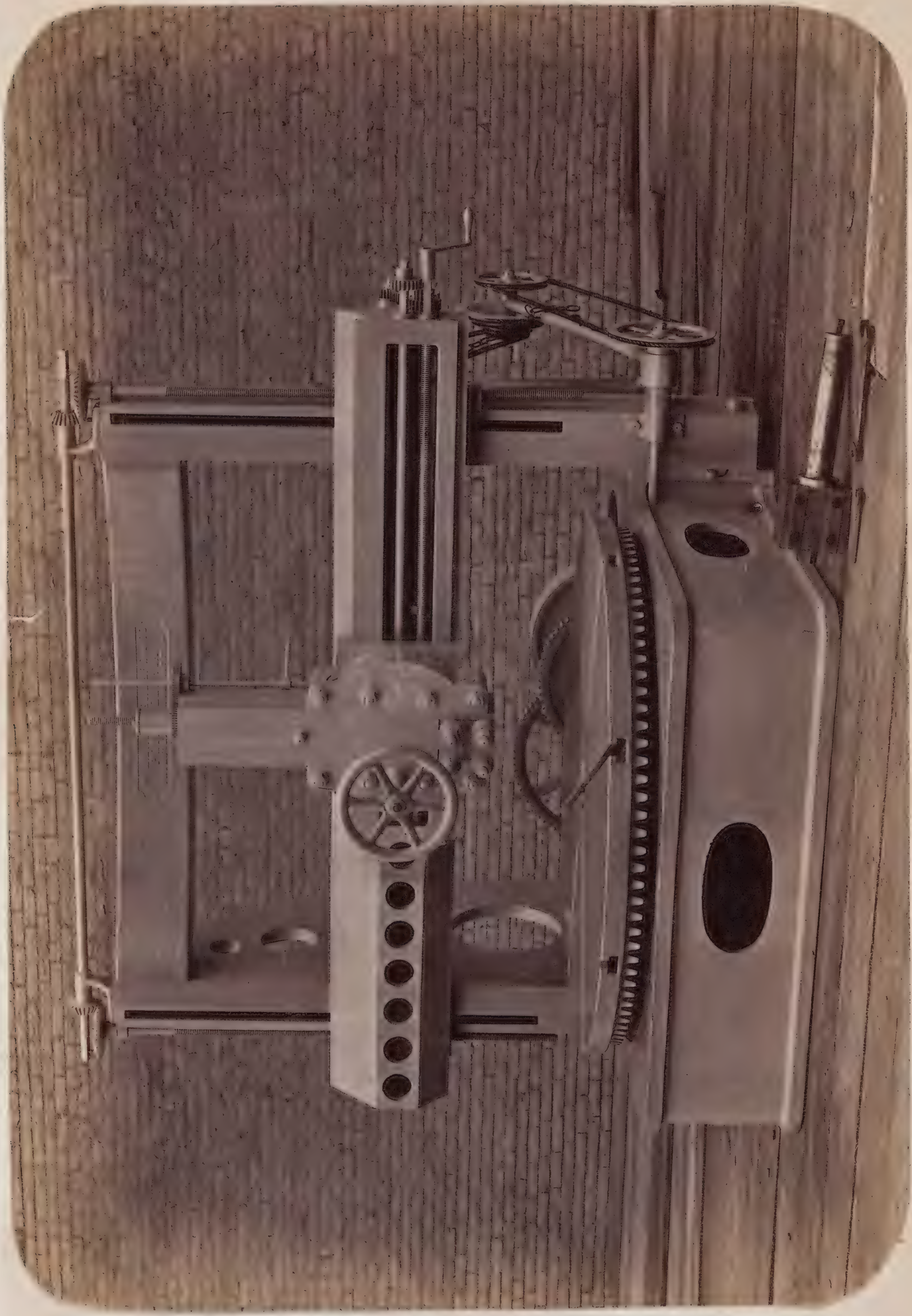
N.B.—This is an important item in the economical use of many of our tools.

Fast and loose pulley on counter-shaft of 7 feet and 10 feet mills, thus: 22 inches diameter, 7 inches face, 80 revolutions per minute.

PRICES.

7 ft. Machine,	40 in.	high,	under	cross	head,	$
10 "	"	40 "	"	"	"	$
10 "	"	6½ ft.	"	"	"	$

Terms: Cash upon delivery at our Works. Boxing and Porterage in addition at cost.



WM. SELLERS.
JOHN SELLERS, JR.
COLEMAN SELLERS.

J. SELLERS BANCROFT.
JAMES C. BROOKS.

Established 1848.

WM. SELLERS & CO.,
PHILADELPHIA.

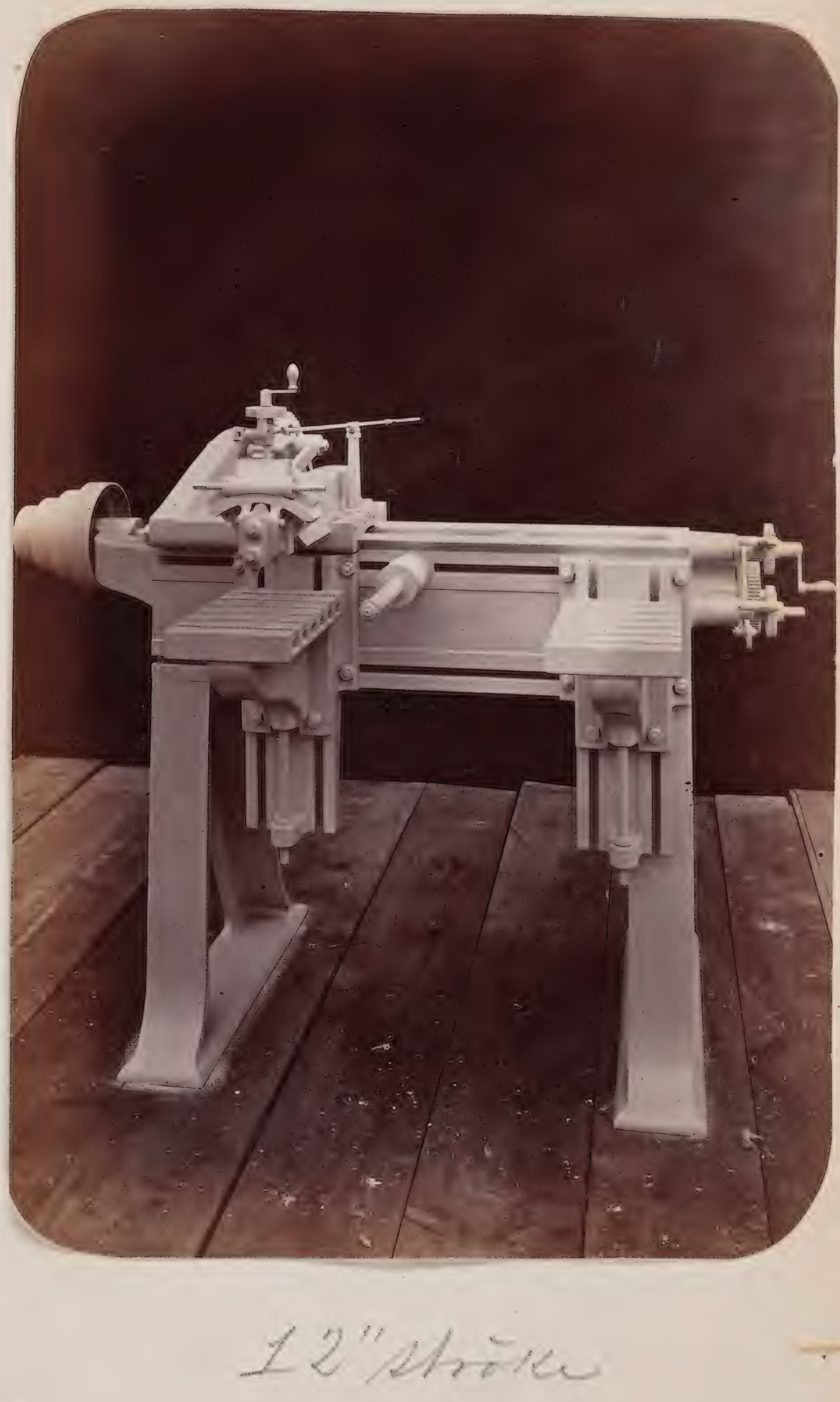
SHAPING MACHINE,

With shaping bar moved by variable crank, with quick return motion—feeds self-acting in all directions—self-acting motions for straight, curved, vertical, and angular work, and internal curves—the planing tool moving in every direction, and the work stationary. Tool holder, with segment wheel and worm, two tables for holding the work adjustable, longitudinally and vertically, two arbors, two pairs of cones—overhead shaft, pulleys, and ball and socket hangers—cone pulleys, turned inside so as to be perfectly balanced—wrought-iron wrenches. Wrought-iron work case-hardened.

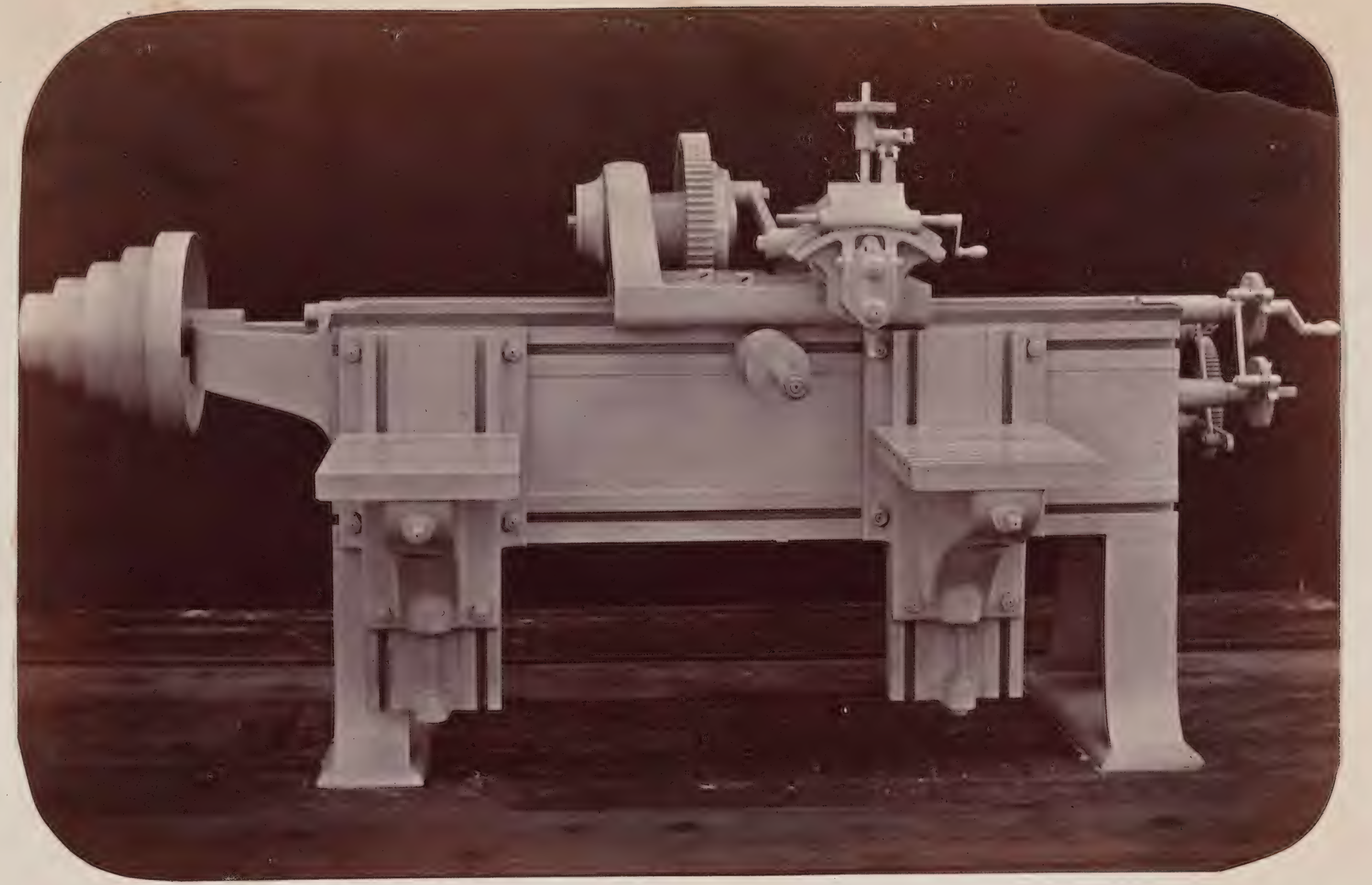
Size of Machine.	To plane in Length.	PULLEYS ON COUNTER-SHAFT.						MACHINE.	Centre Heads on Bar, with Index Plate.	Clamping Vise.
		Fast and Loose.			**Fast and Loose.**					
		Diam.	Face.	Rev. per Minute.	Diam.	Face.	Rev. per Minute.	Price.	Price.	Price.
9″	36″	6″	2½″	400	10″	2½″	150	$....................	$....................	$....................
12″	48″	8″	3″	300	14″	3″	100	$....................	$....................	$....................
16″	66″	10″	4″	380	18″	4″	135	$....................	$....................	$....................

Terms: Cash upon delivery at our Works. Boxing and Porterage in addition at cost.

138



12" stroke



16" stroke

WM. SELLERS.

JOHN SELLERS, JR.
COLEMAN SELLERS.

Established 1848.

J. SELLERS BANCROFT.
JAS. C. BROOKS.

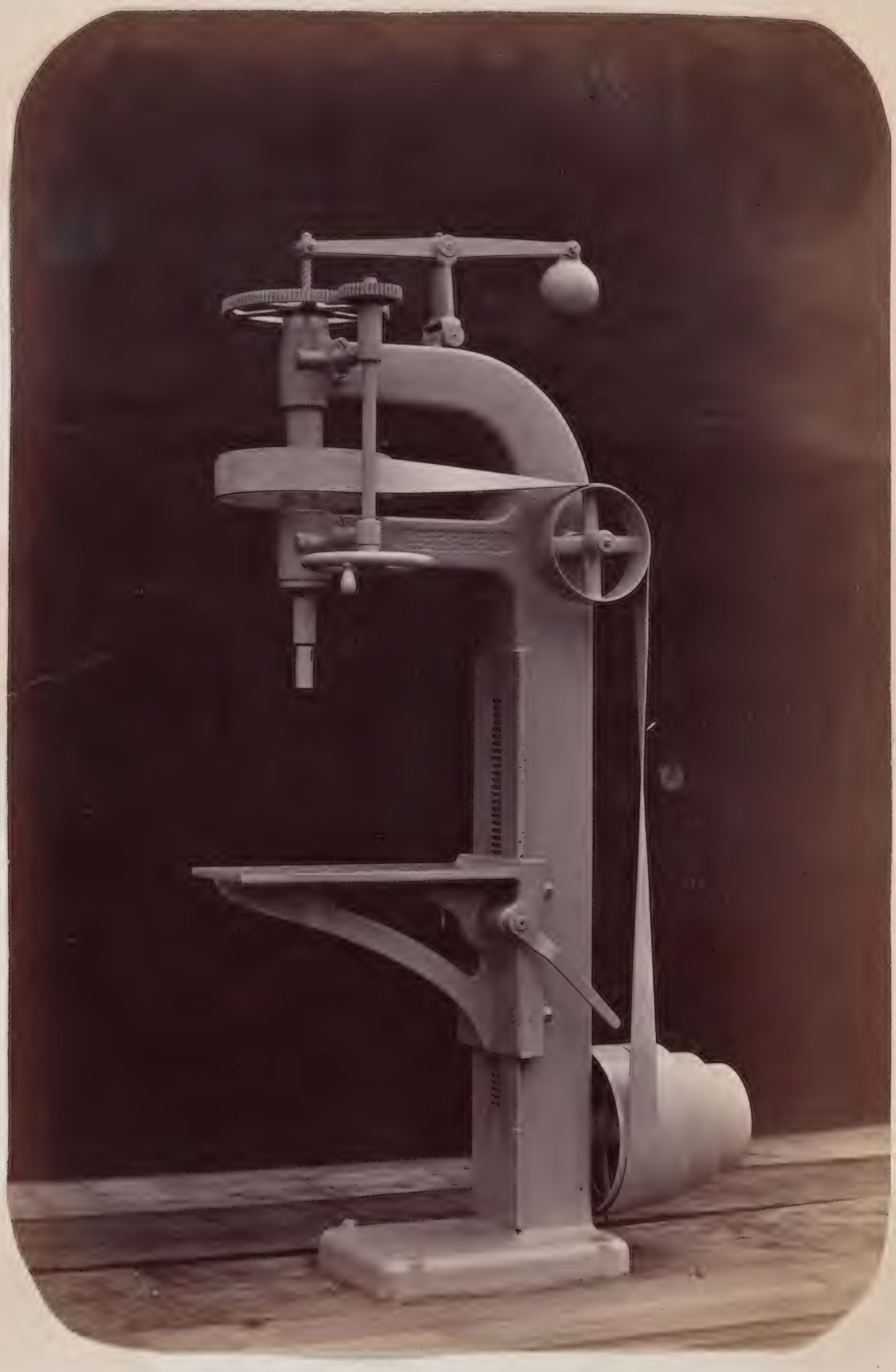
WM. SELLERS & CO.,
PHILADELPHIA.

36-inch Vertical Drill.

Spindle of best cast-steel, driven by belt only, and counterbalanced. 18 inches overreach; feed by hand only. Plain table, adjustable by rack to any required height. Fast and loose pulley on counter-shaft, 12 inches diameter, 4 inches face, which should make 110 revolutions per minute. Wrought-iron work case-hardened.

PRICE . . . . . . $..........

Terms: Cash upon delivery at our Works. Boxing and porterage in addition at cost.



WM. SELLERS.

JOHN SELLERS, JR. Established 1848. J. SELLERS BANCROFT.
COLEMAN SELLERS. JAS. C. BROOKS.

WM. SELLERS & CO.,
PHILADELPHIA.

45-inch Patent Double-Geared Vertical Drill,

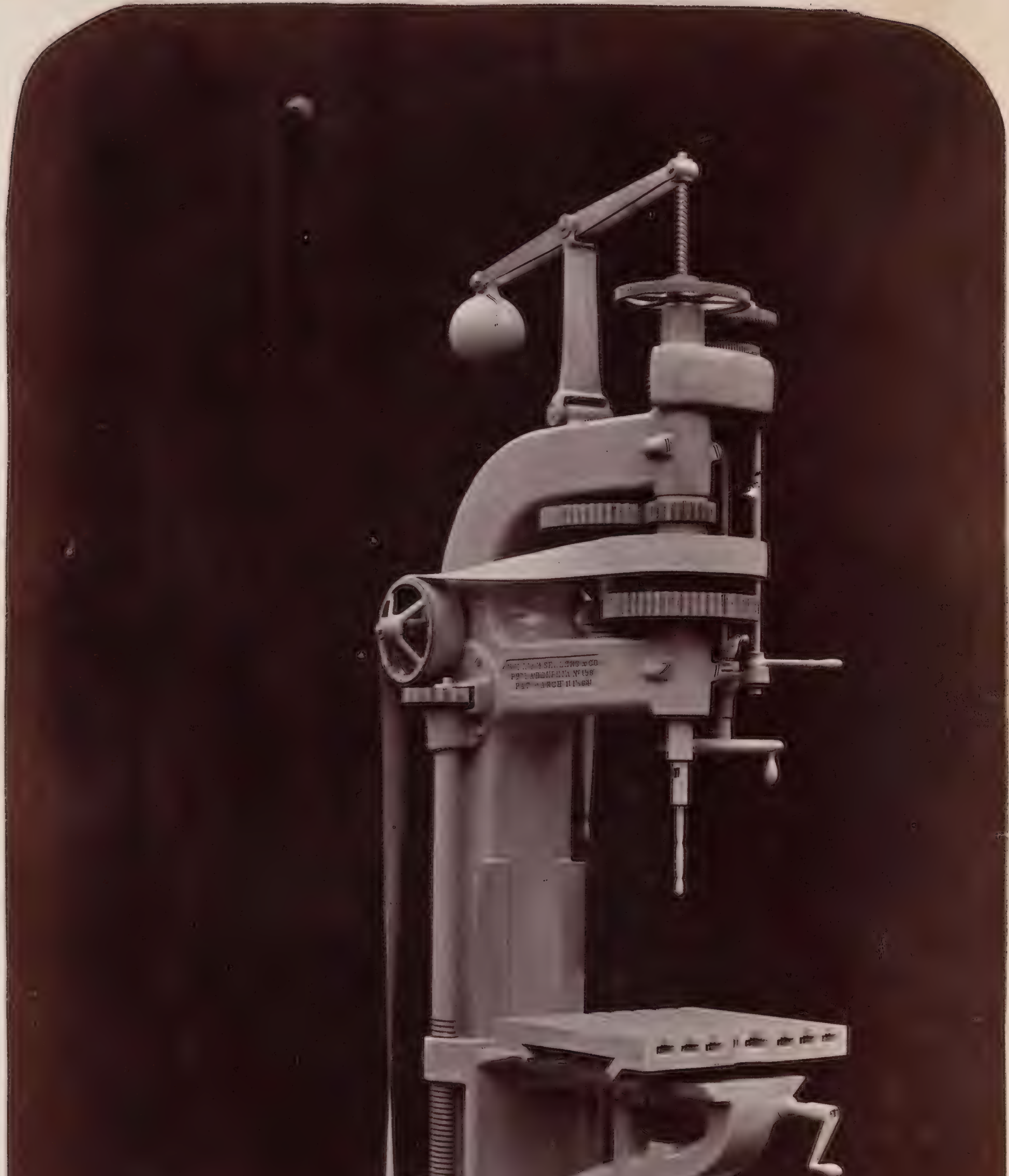
With square column, plain or compound tables, raised and lowered by power, and arranged to swing to one side. Knee carrying table is provided with a bearing to hold lower end of boring bar. Drill spindle counterbalanced with quick hand and variable power feed, always in gear, but not interfering with the rapid movement of spindle vertically by hand. Spindle best cast-steel, 22½ inches from centre of spindle to face of column; driving pulley on the spindle so that when back gear is not in use, the spindle is driven by belt only, *producing a particularly smooth motion for small drilling.* Cone pulley is at base of column, admitting ready change of speed; overhead shaft furnished with fast and loose pulleys, 10″ diameter, 4″ face, which should make 110 revolutions per minute; ball and socket hangers; cone pulleys turned inside so as to be accurately balanced; a full set of wrought-iron wrenches. Wrought-iron work case-hardened.

PRICE, WITH PLAIN TABLE . . $..........................

" " COMPOUND TABLE . . $..........................

Terms: Cash upon delivery at our Works. Boxing and Porterage in addition at cost.

144



WM. SELLERS.
JOHN SELLERS, JR.
COLEMAN SELLERS.

ESTABLISHED 1848.

J. SELLERS BANCROFT.
JAS. C. BROOKS.

WM. SELLERS & CO.,

PHILADELPHIA.

PATENT BOLT AND NUT SCREWING-MACHINE,

With improved die-box, fitted with adjustable dies, to compensate for wear; automatic self-opening attachment, adjustable in length of bolt threaded; self-acting oil-feeder, for dies and tap; full set of taps, with tap-holders, for the range specified; over head shaft ~~tap~~, pulleys and ball-and-socket hangers complete; wrought-iron work case hardened.

The advantages claimed for these machines over others in use are:

1st. The dies revolve and the bolt is stationary, which enables the workman to put in a fresh bolt without stopping the machine, and on long bolts is much more convenient than to revolve the bolt.

2d. The motion of the dies is always in one direction, and the bolt is cut at one operation; the dies open while they are revolving, consequently they leave no mark on the thread.

3d. The dies never run backward; the cutting edge will last much longer than when the motion of the die is reversed.

4th. The dies are adjustable, so as to compensate for wear.

5th. The dies can be changed without taking off any of the die-holding apparatus, and in less time than they can be changed in a common hand-screwing stock.

6th. The bolt-holder is arranged so as always to chuck the bolts in the centre of the dies, thus insuring correct work when the bolts come to be put in their places.

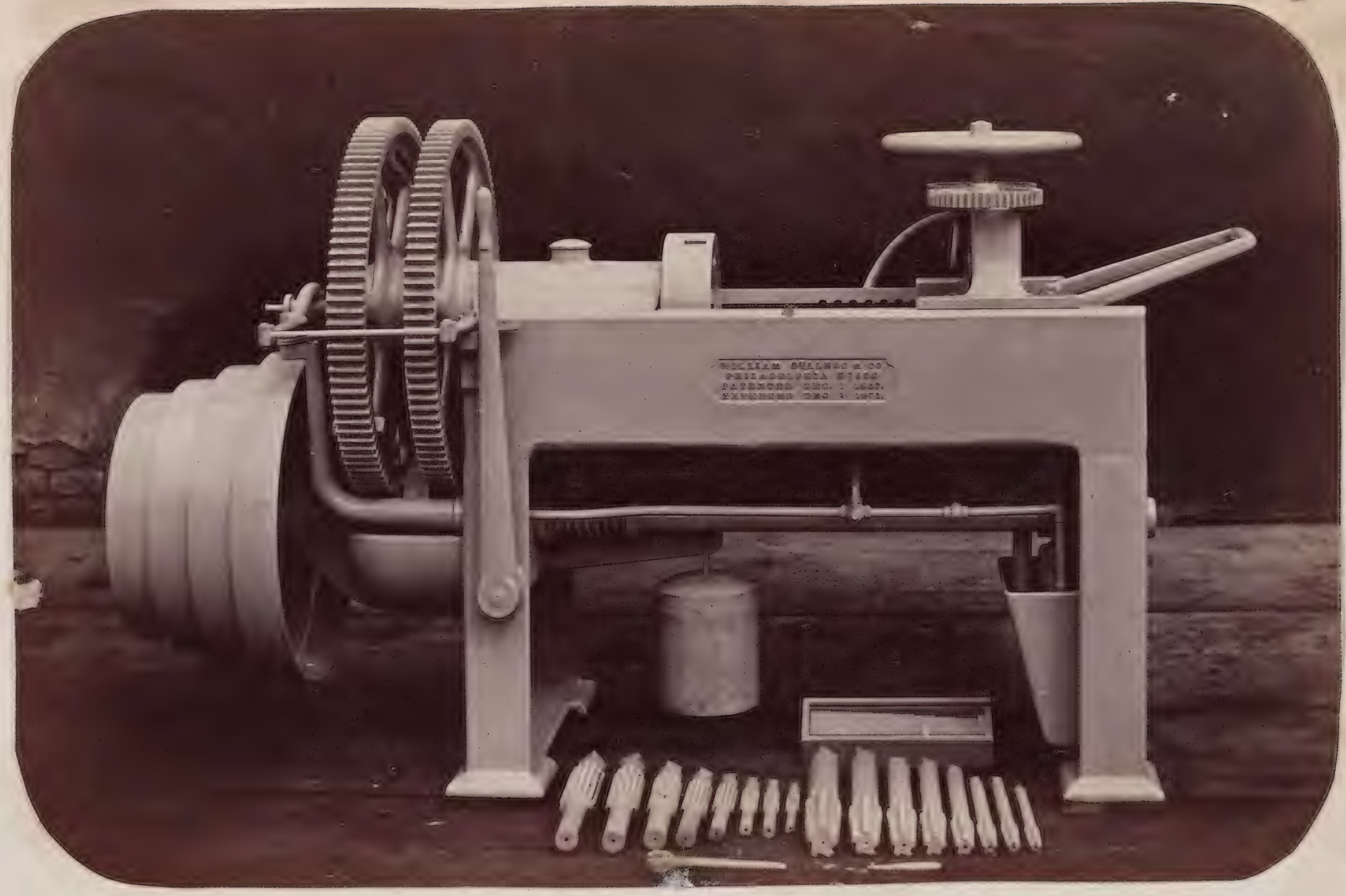
7th. The self-acting oil-feeder insures thorough lubrication of the dies, effectually prevents their heating, and is so arranged as to wash the chips out of the die-box.

8th. The automatic self-opening attachment insures uniformity in length of bolt threaded.

PATENT BOLT AND NUT SCREWING-MACHINE.

Size of Machine.	Range of Cut.	No. of Taps sent with each.	Speed of Counter.	Size of Fast and Loose Pulleys.					Hobs and Collars for recutting Dies, extra.
				Diam.	Face.				
					Loose.	Fast.	Loose.	Price.	Price.
3/4″	1/4″ to 3/4″	8	200 revolutions per minute in all cases.	12″	7″	4″	7″	$..............	$..............
1″	5-16″ to 1″	8		13″	7″	4″	7″	$..............	$..............
1 1/2″	1/2″ to 1 1/2″	8		14″	8″	4 1/4″	8″	$..............	$..............
2″	3/4″ to 2″	8		19″	8″	4 1/4″	8″	$..............	$..............
2 1/2″	1″ to 2 1/2″	8		20″	8″	4 1/4″	8″	$..............	$..............
3″	1 1/8″ to 3″	9		22″	8″	5″	8″	$..............	$..............
4″	1 1/2″ to 4″	9		26″	8″	5″	8″	$..............	$..............

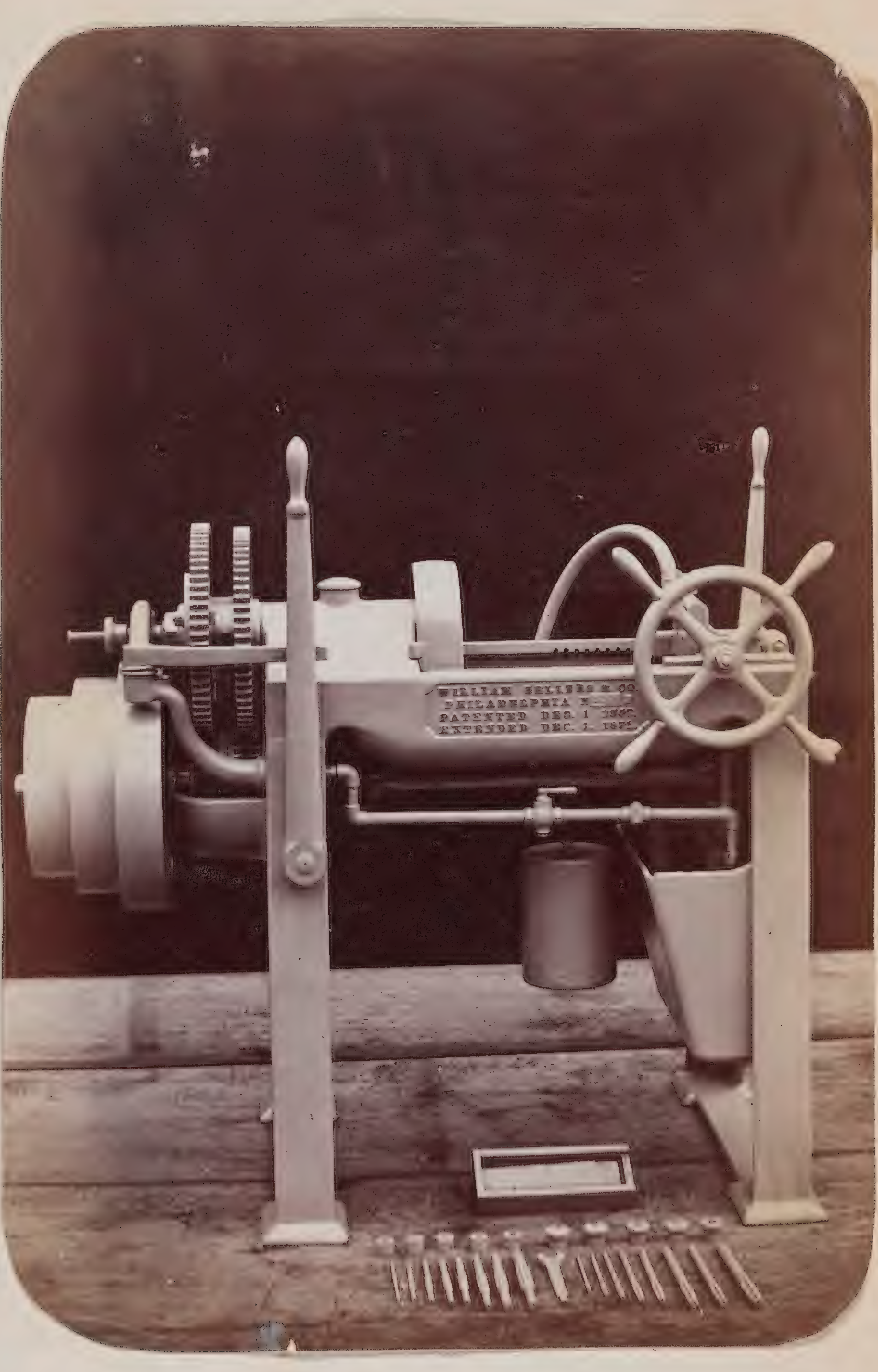
Terms: Cash upon delivery at our Works. Boxing and Porterage, extra, at cost.


WILLIAM SELLERS & CO.
PHILADELPHIA
PATENTED DEC. 1 1857.
EXTENDED DEC 1. 1871.

2 1/2"

2 1/2

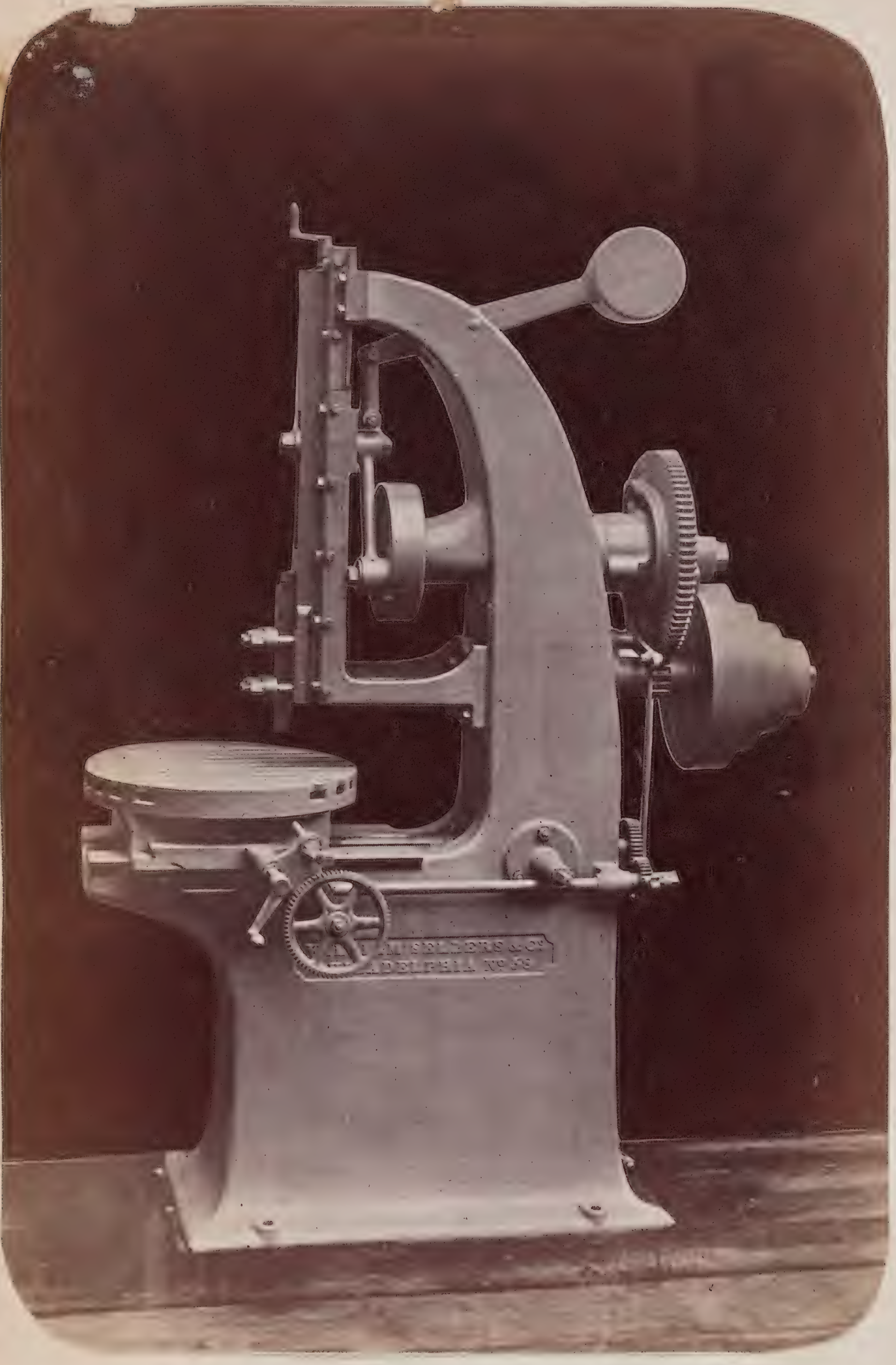
3/4



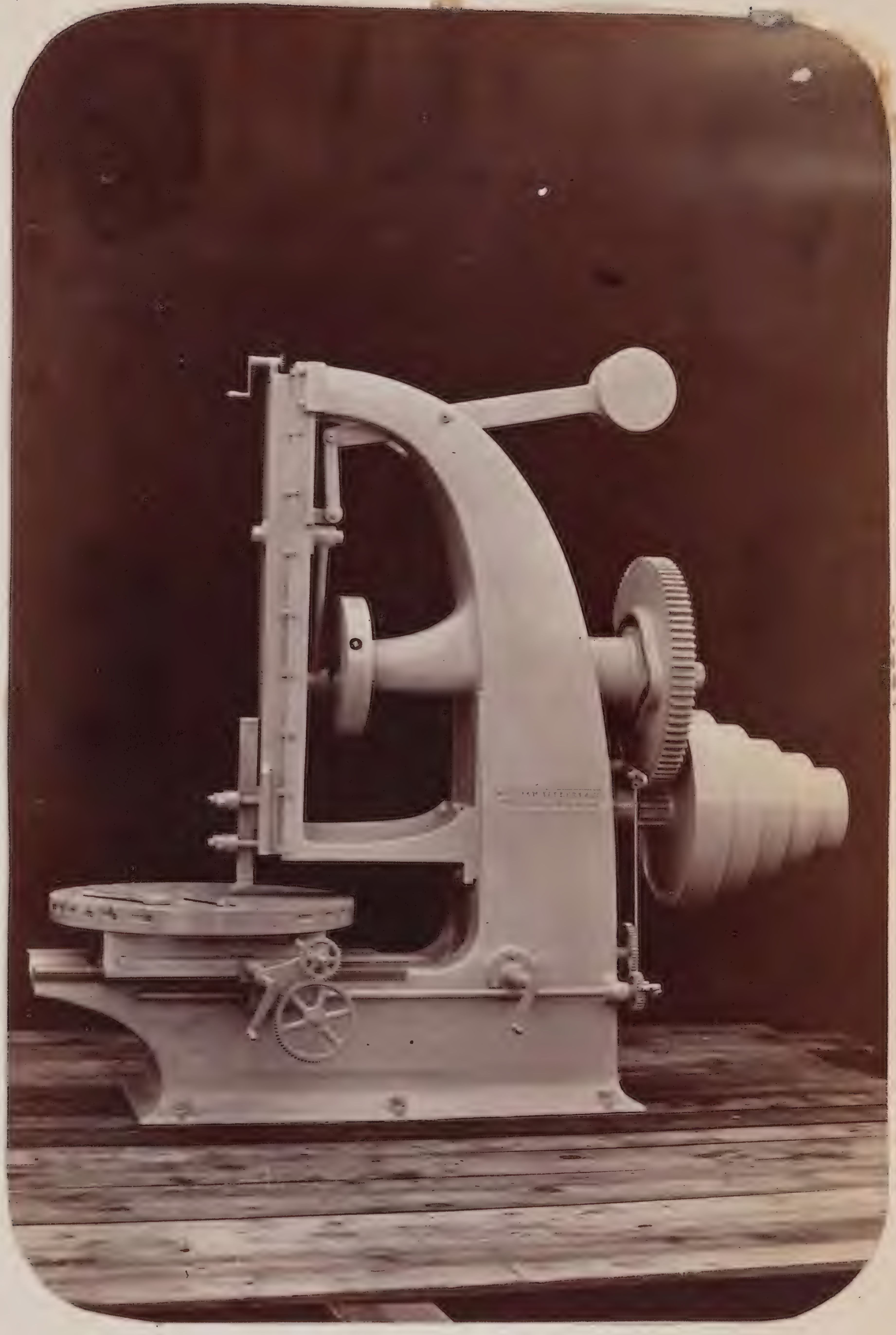
WILLIAM SELLERS & CO.
PHILADELPHIA
PATENTED DEC. 1 1857
EXTENDED DEC. 1. 1871

3/4"

150



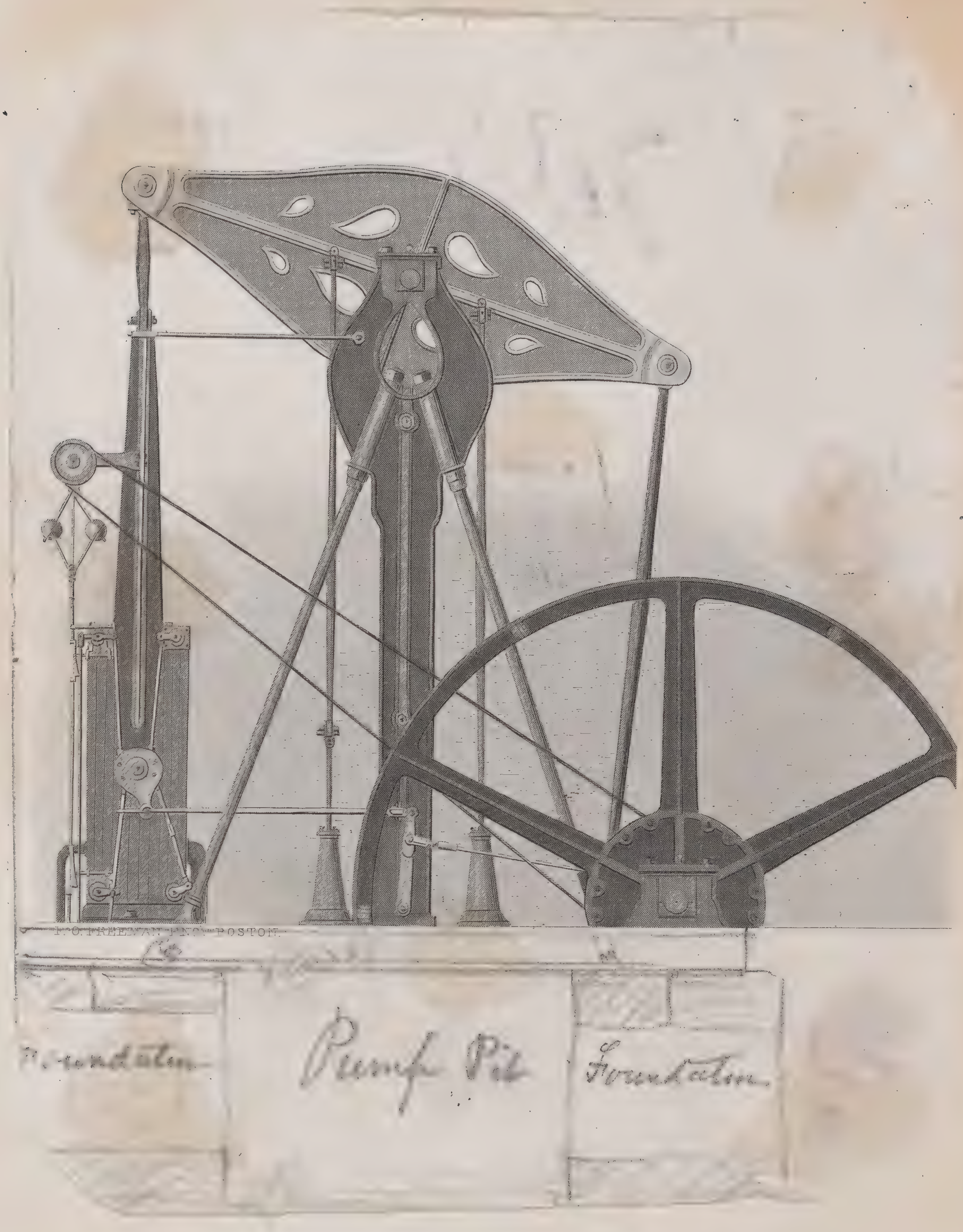
36"



72"

15-4

Corliss Eng Co


F. O. FREEMAN ENG. BOSTON.

WM. SELLERS.
JOHN SELLERS, JR.
COLEMAN SELLERS.

Established, 1848.

J. SELLERS BANCROFT.
JAS. C. BROOKS.

WM. SELLERS & CO.,

PHILADELPHIA.

STEAM HAMMERS.

Piston rod or hammer bar, of solid wrought iron, passing through both heads of cylinder; piston head forged solid with piston rod. Hammer head adjustable on lower end of bar; bar prevented from turning by upper cylinder head. Slide valve balanced.

Hammers of 2,500 lbs. weight, and under, have one upright only, are double acting, taking steam above and below the piston, with self-acting valve-gear and hand motion operated by the same lever: can be changed, at will, whilst in operation, thus affording complete control over the length, rapidity and force of blow, also enabling the hammer to be used as a vise or squeezer. 1,000 lbs., and under, have anvil block passing through the base of upright. Hammers of 1,500 lbs. and under are provided with a means of throttling the exhaust below the piston, so as to enable the blow to be diminished in intensity without materially decreasing the rapidity of motion. This attachment is of the utmost importance in finishing light work or tilting steel. All Hammers over 2,500 lbs. weight have double uprights and are hand-working only, taking steam above and below the piston, thereby increasing the force and rapidity of blows.

STEAM HAMMERS.

Size or Weight of Hammer Ram.	Length of Stroke.	Height under Frame.	Width between Frames.	Hammer Face.	Price.	Price of Bed Plate.	Price of Anvil Block.
300 lb.	15½″	SINGLE UPRIGHT.	SINGLE UPRIGHT.	6¾″4½″	$	Including Anvil Block and Bed Plate.	
650 “	18″			8½″×5½″	$		
1000 “	20″			9″×5¾″	$		
1500 “	23″			10¼″×6″	$	$	$ ....
2000 “	27″			11¾″×7″	$	$	$ ....
2500 “	31″			13½″×9″	$	$	$ ....
1½ ton	3′	5′ 9″	7′ 4″	16½″×9½″	$	$	$ ....
2 “	3′ 4″	6′ 0¾″	7′ 10½″	17¾″×10″	$	$	$ ....
2½ “	3′ 9″	6′ 6⅜″	8′ 9″	19½″×12″	$	$	$ ....
3 “	4′ 2″	7′ 0⅛″	9′ 0¾″	21¼″×12½″	$	$	$ ....
4 “	4′ 6″	7′ 5⅜″	10′ 6″	23″×14″	$	$	$ ....
5 “	5′ 3″	8′ 4½″	12′ 3″	26½″×16″	$	$	$ ....
7 “	6′	9′ 4″	14′	29½″×18″	$	$	$ ....

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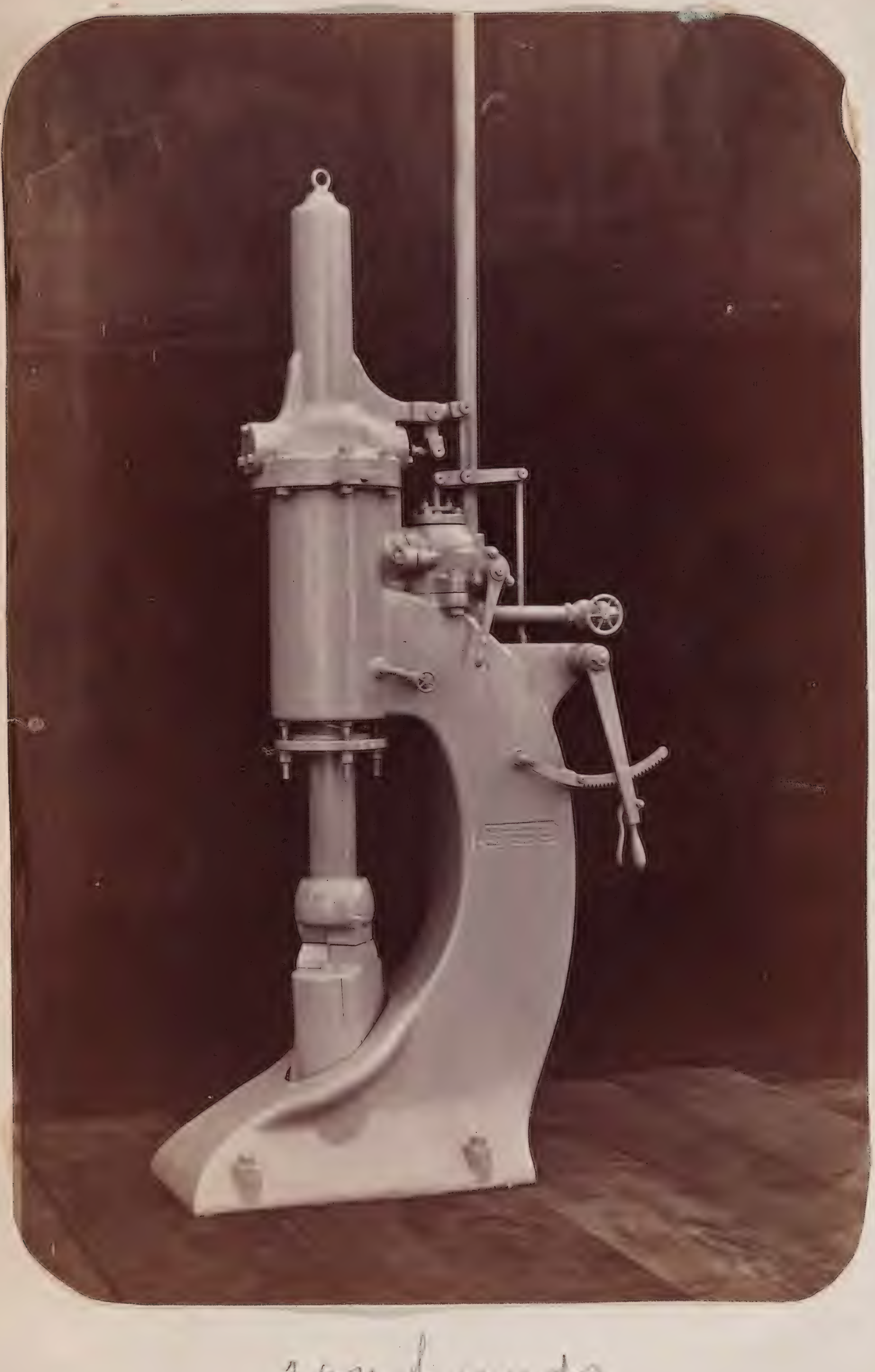
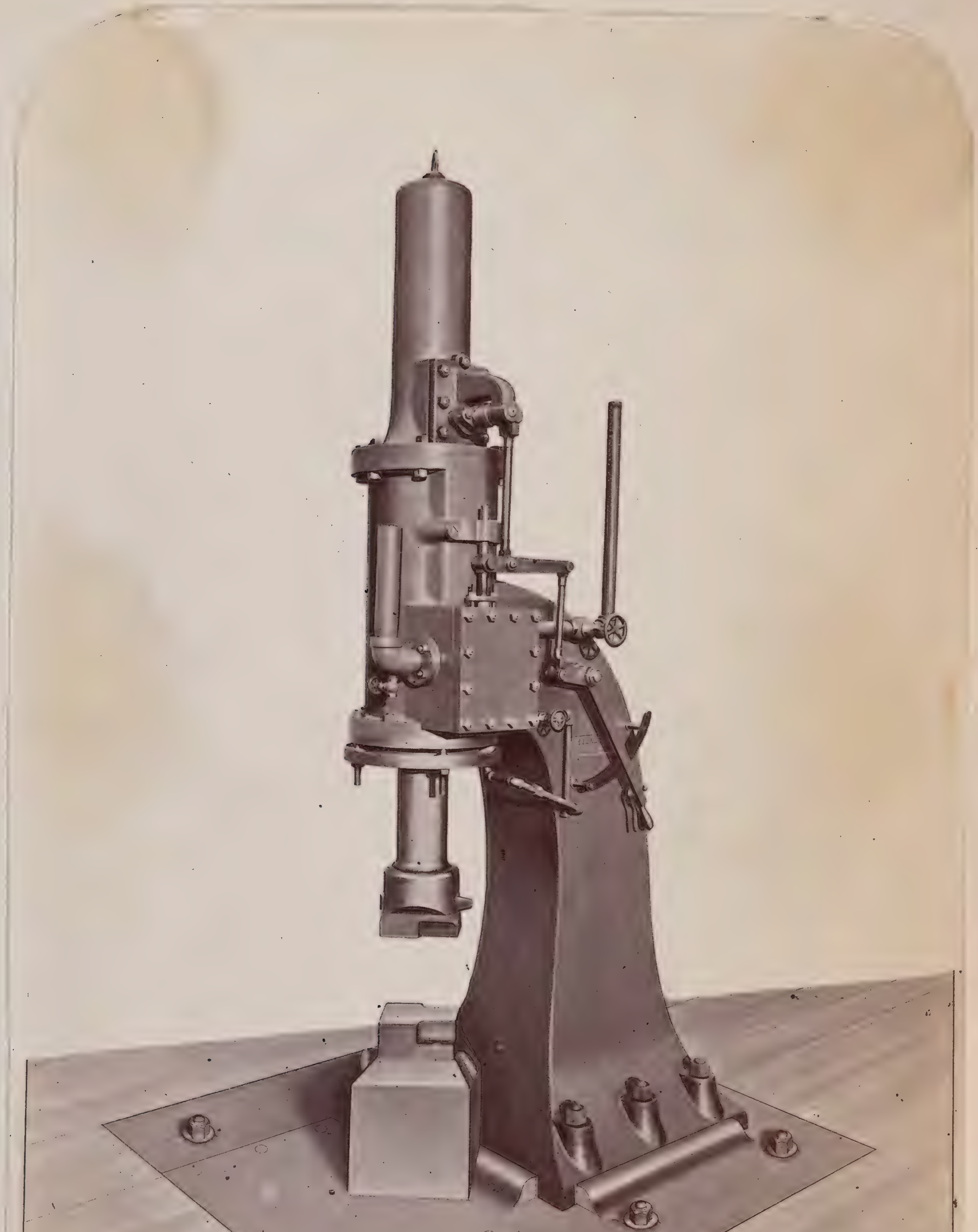
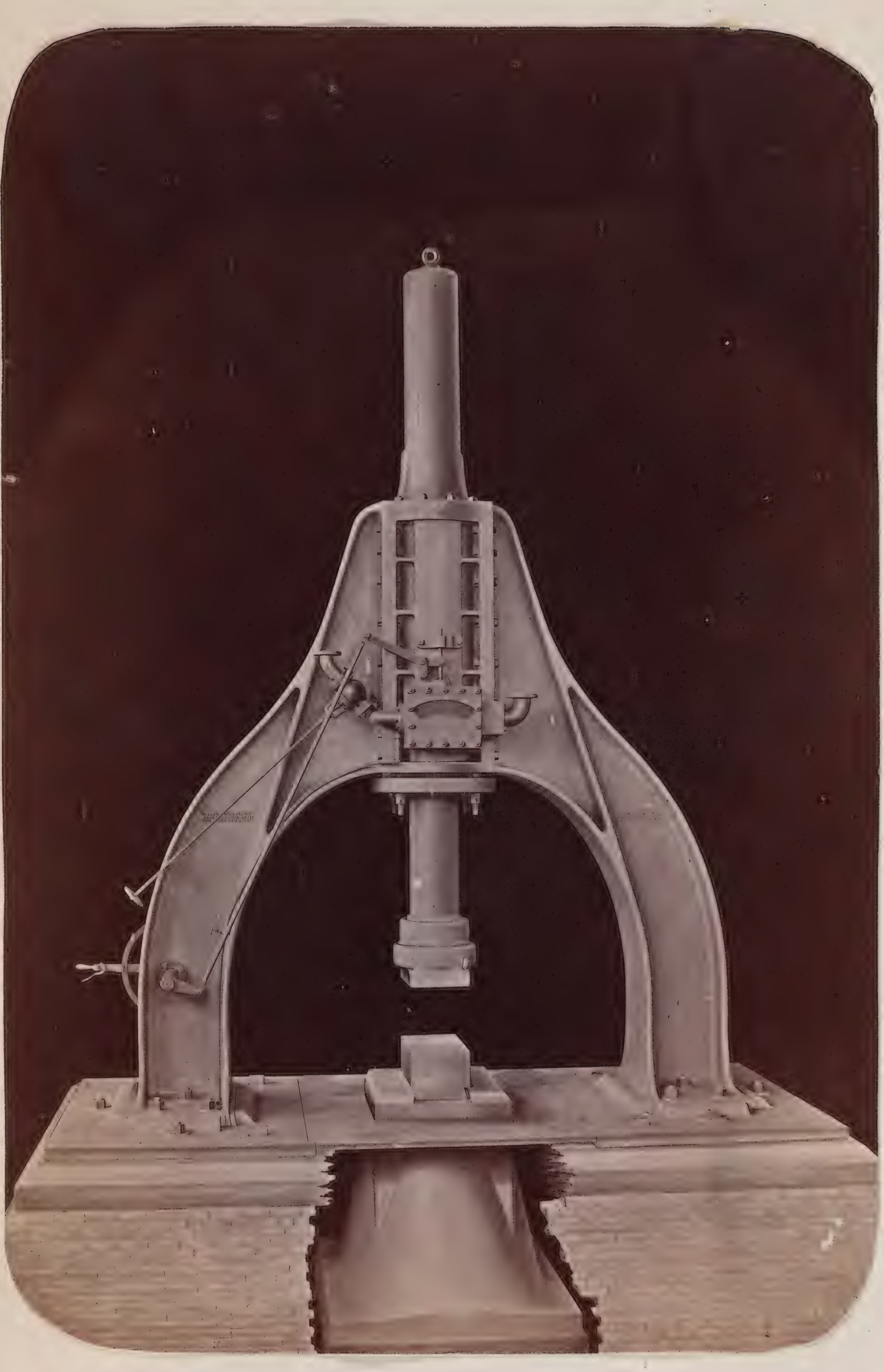


300 pounds

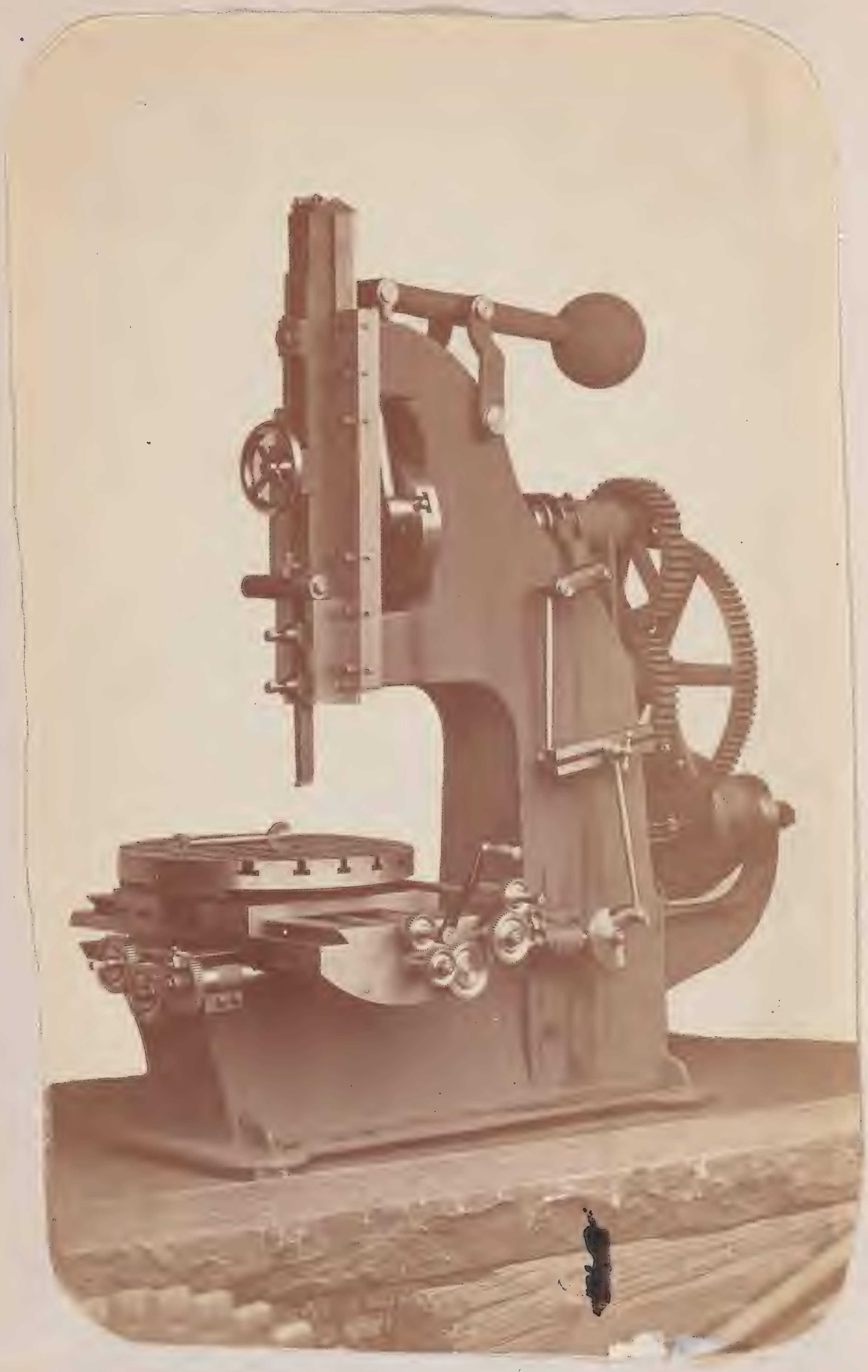
15-8

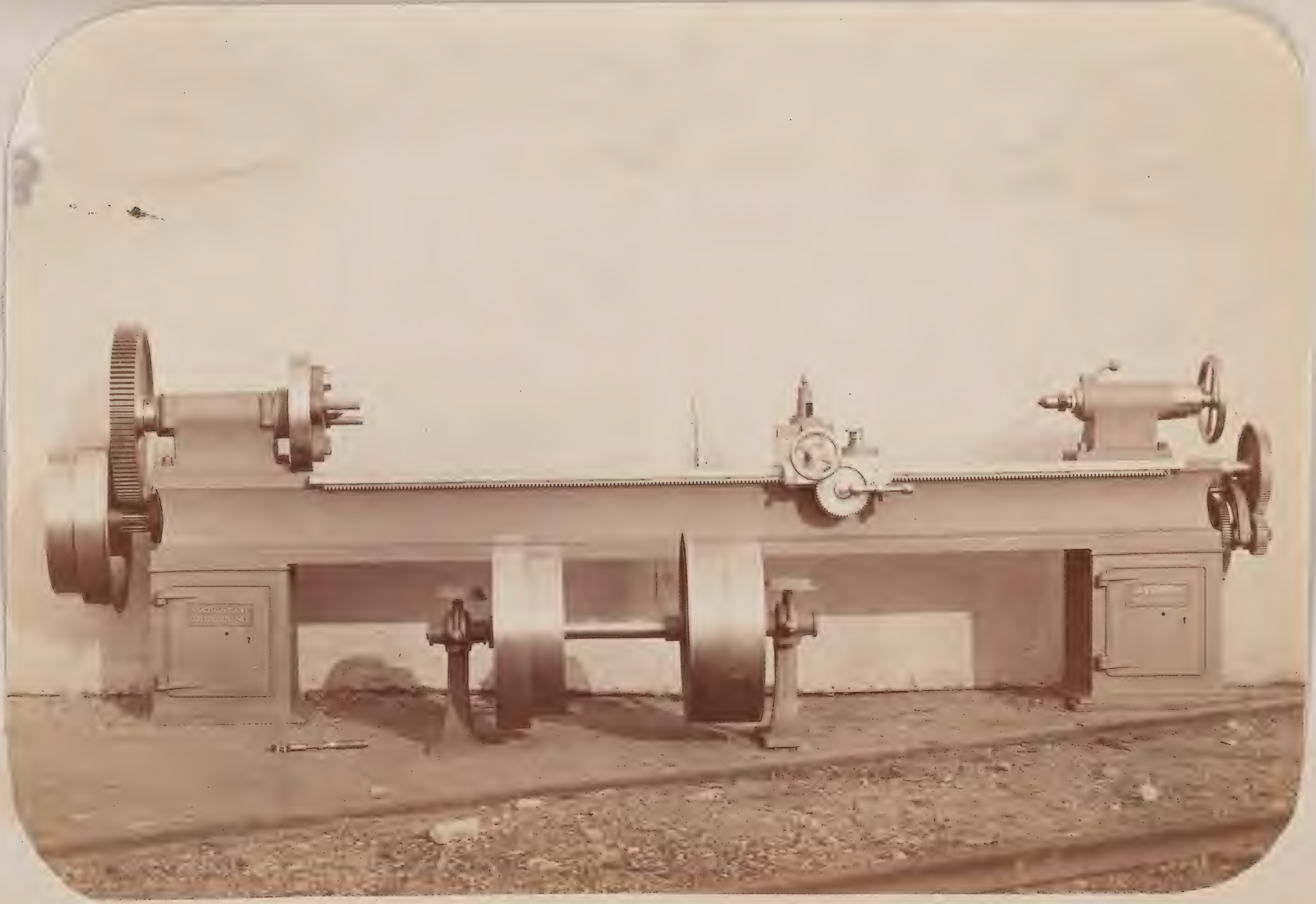


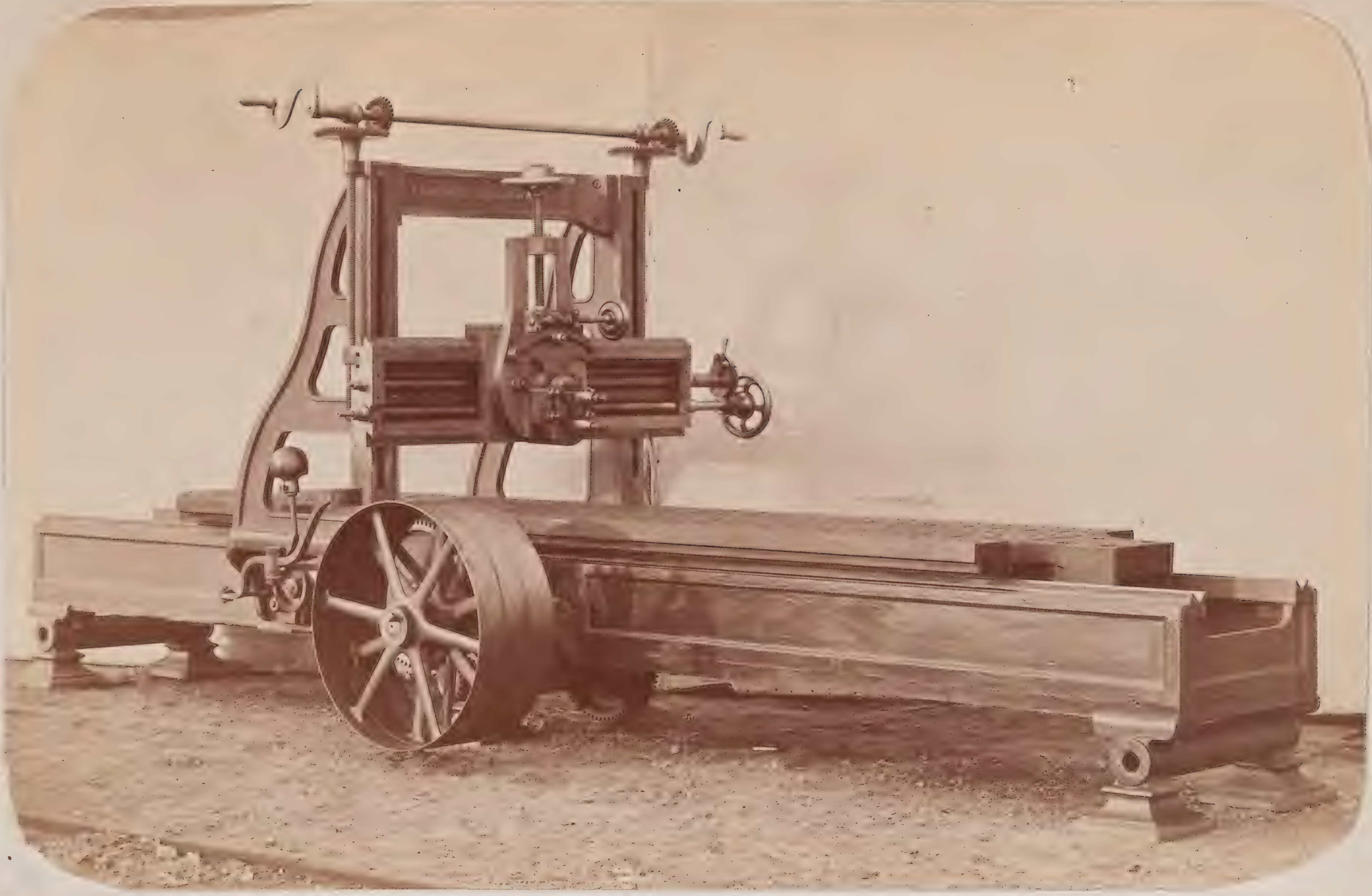
1500 pounds



2 1/2 Tons



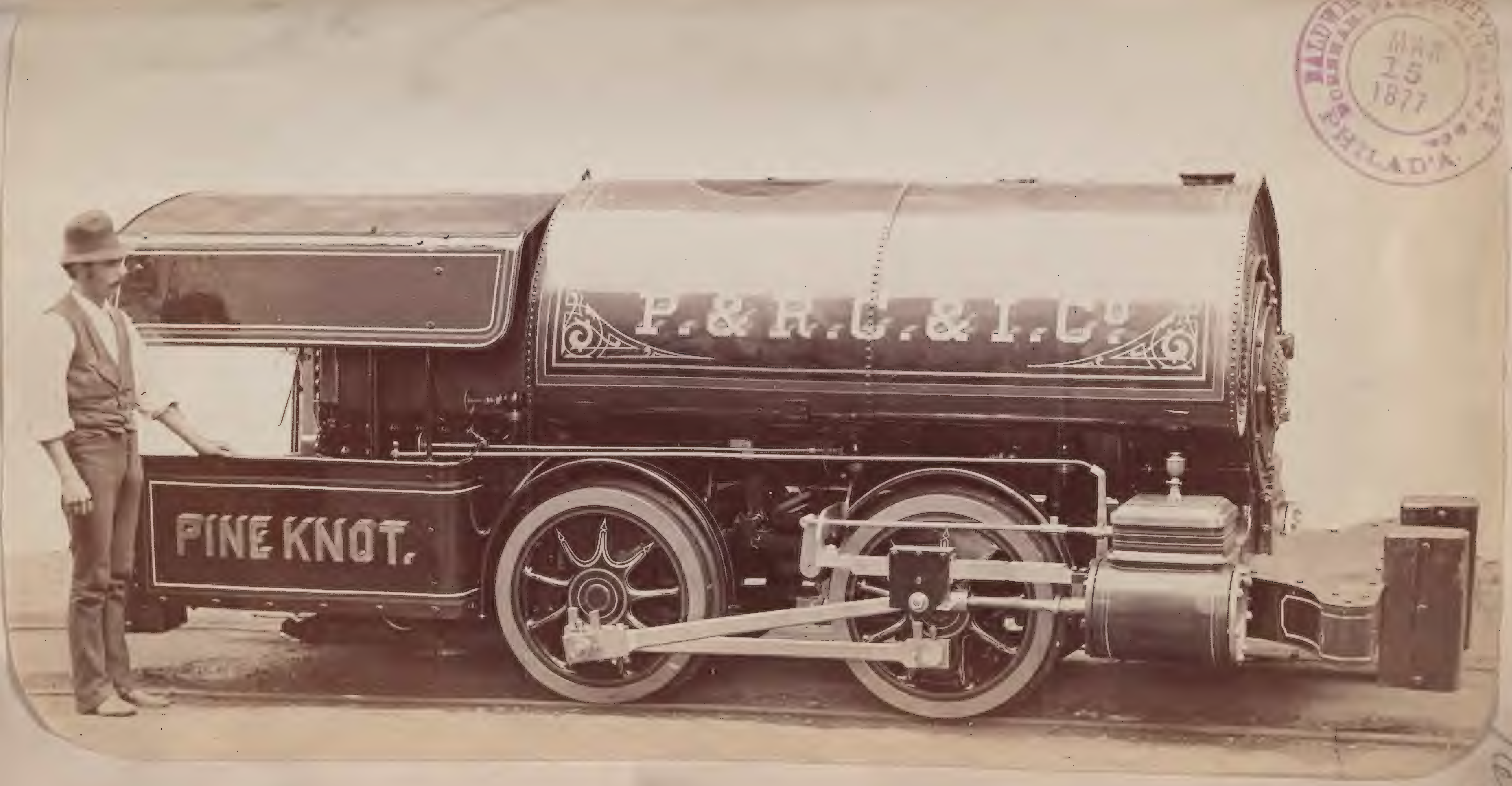




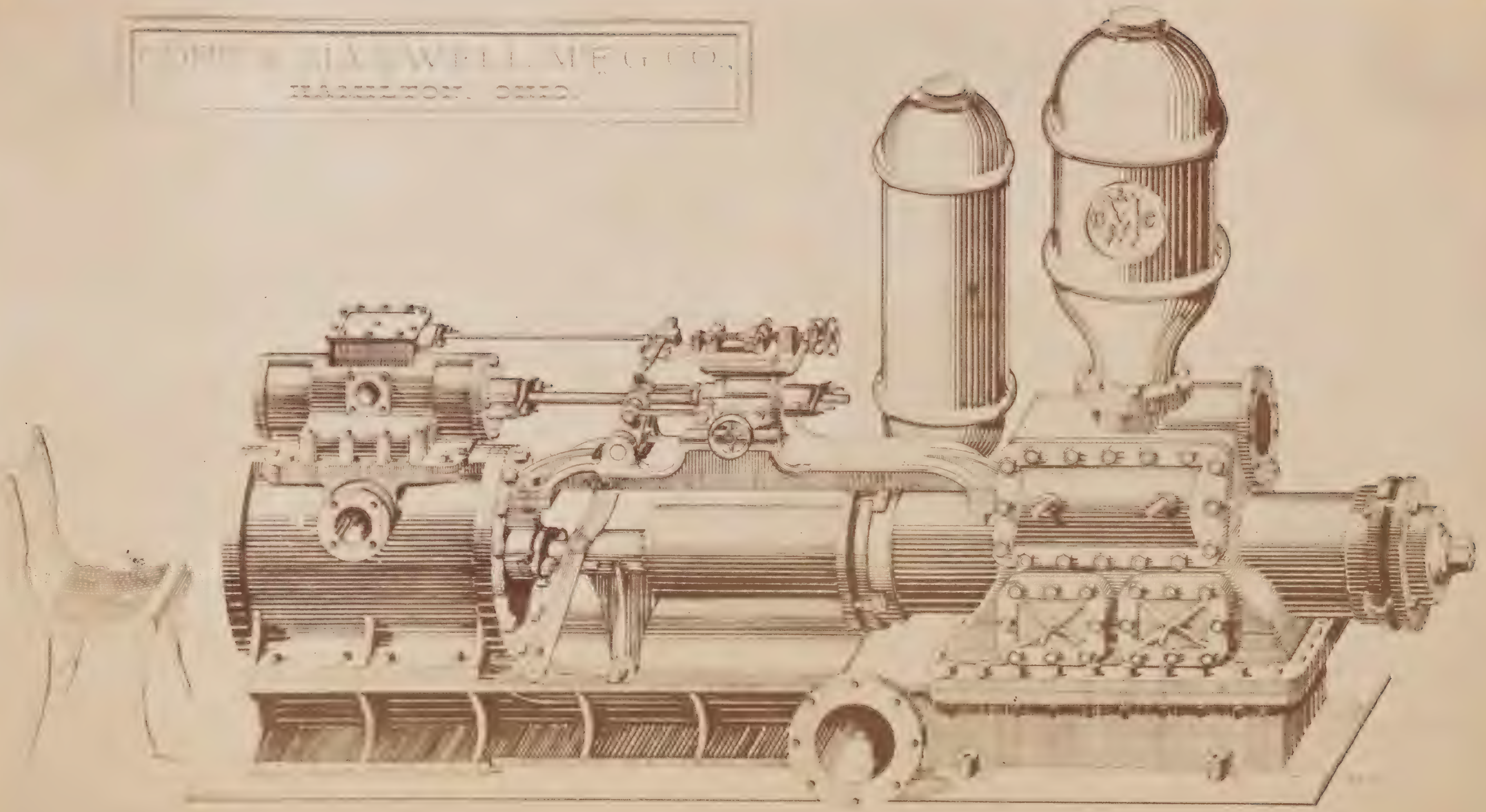
Powell - Arsmith

1164

BALDWIN LOCOMOTIVE WORKS
BURNHAM, PARRY, WILLIAMS & Co.
MAR 15 1877
PHILAD'A.



COPE & MAXWELL MFG. CO.,
HAMILTON, OHIO.



ISOCHRONAL PUMPING ENGINE.

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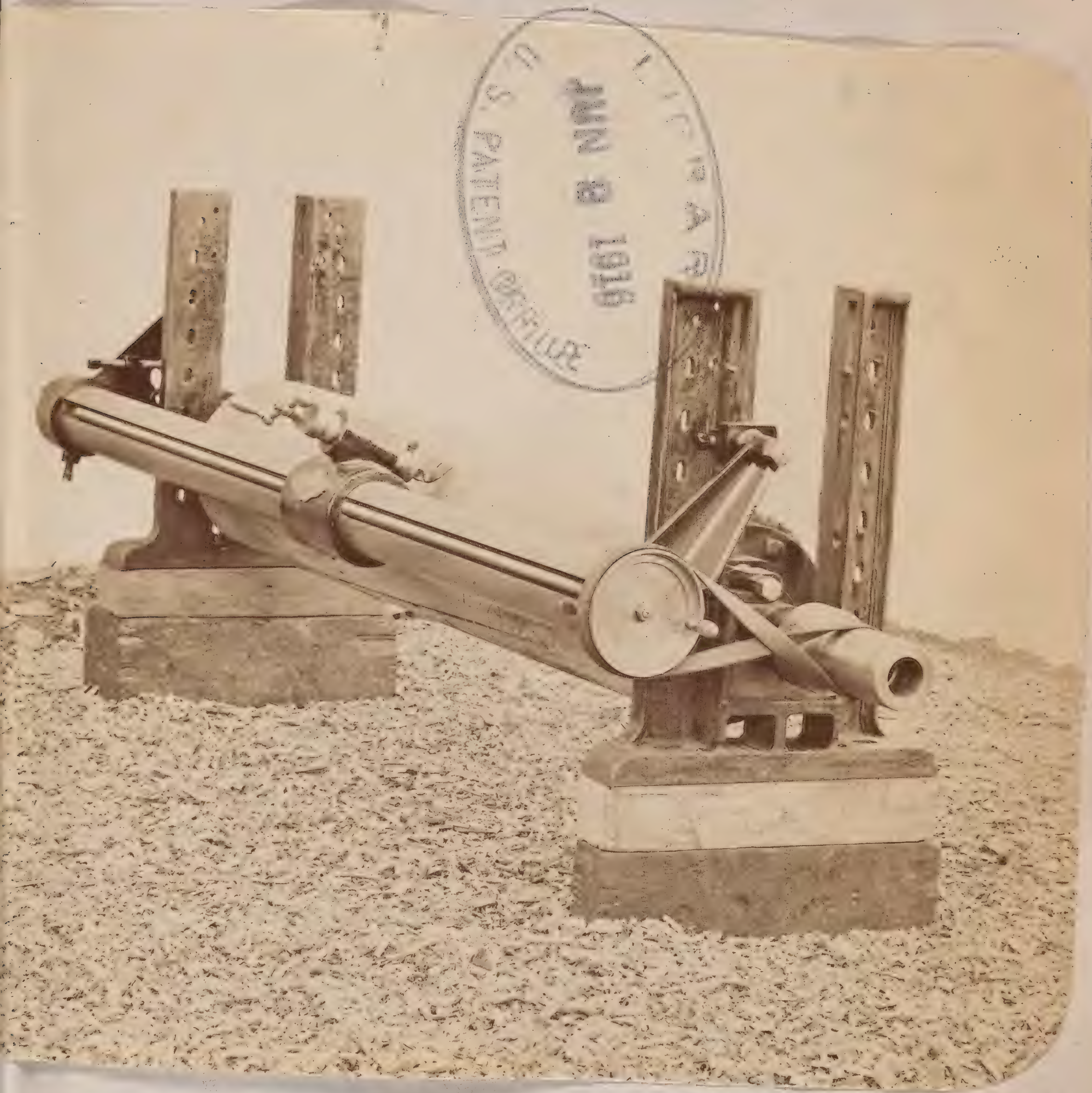

for turning paper mill rolls